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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2023

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission File Number: 001-40631

Caribou Biosciences, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**45-3728228**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
2929 7th Street, Suite 105 Berkeley, California	**94710**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (510) 982-6030

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.0001 per share	CRBU	The Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the Registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the Registrant included in the filing reflect the correction of an error to previously issued financial statements are restatements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the Registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant on June 30, 2023, based on the closing price of the shares of common stock on the Nasdaq Global Select Market on such date, was $263.4 million This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any purpose.

The number of shares of Registrant's Common Stock outstanding as of March 5, 2024 was 90,314,501.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement for the 2024 Annual Meeting of Stockholders are incorporated by reference into Part III.

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Risk Factors Summary

Our business is subject to a number of risks of which you should be aware before making a decision to invest in our common stock. These risks are more fully described in the "Risk Factors" section in Part I, Item 1A of this Annual Report on Form 10-K. These risks include, among others, the following:

- We have incurred significant operating losses since our inception and anticipate that we will incur continued operating losses for the foreseeable future and may not be able to achieve or sustain profitability.
- We will need substantial additional financing to develop our product candidates and implement our operating plans. If we fail to obtain additional financing, we may be delayed or unable to complete the development and commercialization of our product candidates.
- We have a limited operating history, which may make it difficult to evaluate our technologies and product candidate development capabilities or to predict our future performance.
- We are early in our development efforts and it will be many years before we commercialize a product candidate, if ever. If we are unable to advance our product candidates through clinical trials, obtain regulatory approval, and ultimately commercialize our product candidates, or we experience significant delays in doing so, our business will be materially harmed.
- Our product candidates are cell therapies generated by our novel CRISPR chRDNA genome-editing technologies, which make it difficult to predict the time and cost of developing these product candidates and obtaining regulatory approval. To date, no other products that use these chRDNA genome-editing technologies have advanced into clinical trials or received marketing approval in the United States.
- Our business is highly dependent on the success of our product candidates, which will require significant additional preclinical studies and/or human clinical trials before we can seek regulatory approval and commercialize our product candidates. If we are unable to advance our preclinical studies and clinical trials and obtain regulatory approval for, and successfully commercialize, our product candidates for the treatment of patients in approved indications, or if we are substantially delayed in doing so, our business will be significantly harmed.
- If we experience delays or difficulties enrolling patients in the clinical trials for our product candidates, including our CB-010, CB-011, and CB-012 product candidates, our ability to advance our product candidates through clinical development and the regulatory process could be delayed or prevented.
- Our clinical trials may fail to adequately demonstrate the safety and efficacy of any of our product candidates and if this happens, the development of our product candidates may be delayed or unsuccessful, which could prevent or delay regulatory approval and commercialization.
- If our product candidates cause serious adverse events or undesirable side effects, including injury and death, or have other properties that could delay or prevent regulatory approval, they would have limited or no commercial potential.
- We rely on third parties to supply the materials for, and the manufacturing of, our clinical product candidates, and, if such product candidates receive regulatory approval, we may continue our reliance on third parties for manufacturing of our commercial products. Our success is subject to the performance of these third parties.
- We rely and will continue to rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or do not meet deadlines, we may not be able to obtain regulatory approval of, or commercialize, our product candidates.
- We face significant competition from other biotechnology and pharmaceutical companies, which may result in other companies developing or commercializing products before, or more successfully than, we do, thus rendering our product candidates non-competitive or reducing the size of the market for our product candidates. Our operating results will suffer if we fail to compete effectively.

- If we do not possess the necessary intellectual property rights covering our CRISPR chRDNA genome-editing technologies, our product candidates, and other proprietary technologies, we may not be able to block competitors or to compete effectively in the market.
- Third-party claims of intellectual property infringement may prevent or delay our ability to commercialize our product candidates.
- Our rights to develop and commercialize our product candidates are subject to the terms and conditions of our licenses and assignments with third parties. If we fail to comply with our obligations under these agreements, we could lose intellectual property rights and be subject to litigation from our licensors or assignors.
- Our ability to continue to receive licensing revenue and to enter into new licensing arrangements related to the foundational CRISPR-Cas9 intellectual property will be substantially impaired if such intellectual property is limited by administrative patent proceedings or other patent challenges.
- Our future success depends on our ability to retain our executive officers and to attract, retain, and motivate qualified personnel.
- Our internal computer systems, or those of third parties with which we interact, may fail or suffer security breaches, which could result in a material disruption of the development of our product candidates and research programs, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.
- We have incurred, and will continue to incur, increased costs as a result of operating as a public company, and our management will continue to devote substantial time to compliance initiatives and corporate governance practices.
- The market price of our common stock has been, and may continue to be, volatile, and our investors may suffer substantial losses if the price of our common stock drops significantly.

Throughout this Annual Report on Form 10-K, "Company," "Caribou," "Caribou Biosciences," "we," "us," and "our," except where the context requires otherwise, refer to Caribou Biosciences, Inc. and its consolidated subsidiaries, and "our board of directors" refers to the board of directors of Caribou Biosciences, Inc.

We have registered CARIBOU BIOSCIENCES®, CARIBOU®, SITE-SEQ®, and our logo as trademarks in the United States and certain other jurisdictions. This Annual Report on Form 10-K contains references to our trademarks and service marks and to those belonging to other entities. Solely for convenience, trademarks and service marks referred to in this Annual Report on Form 10-K, including logos, artwork, and other visual displays, may appear without the ® or ™ symbols, but in the case of our trademarks and service marks, such references are not intended to indicate in any way that we will not assert, to the fullest extent under applicable law, our rights to these trademarks and service marks. We do not intend our use or display of other entities' trademarks or service marks to imply a relationship with, or endorsement or sponsorship of us by, any other entity.

Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements. All statements other than statements of historical facts contained in this Annual Report on Form 10-K are forward-looking statements, including statements regarding our business strategy, plans, and objectives; expectations regarding our clinical and preclinical development, including our expectations with respect to their timing and the expected disclosure of clinical and preclinical data; the safety, efficacy, and potential advantages of our product candidates; future regulatory filings and interactions with regulatory authorities; our results of operations and financial position; plans and objectives of management for future operations; and the like. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expect," "plan," "anticipate," "could," "intend," "target," "project," "contemplate," "believe," "estimate," "predict," "potential," or "continue," or the negative of these terms or other similar expressions, although not all forward-looking statements contain these words. Forward-looking statements include, but are not limited to, statements concerning:

- our expectations regarding the initiation, timing, progress, and results of our product candidate clinical trials and our preclinical research programs, including our timing expectations relating to the release of additional patient data from our ongoing clinical trials for CB-010, CB-011, and CB-012, as well as timing for the initiation of different phases of these trials;
- our ability to demonstrate, and the timing of, preclinical proof-of-concept *in vivo* for our product candidates;
- our ability to successfully develop our product candidates and to obtain and maintain regulatory approval for our product candidates;
- the likelihood of our clinical trials demonstrating safety and efficacy of our product candidates;
- the beneficial characteristics, therapeutic effects, and potential advantages of our product candidates;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- our ability to take advantage of expedited regulatory pathways for our product candidates;
- our strategic plans for our business, product candidates, research programs, and technologies;
- the expected benefits of potential strategic collaborations with third parties, including our agreements with Pfizer and our ability to attract additional collaborators;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and genome-editing technology;
- anticipated developments related to our competitors and our industry;
- our ability to adequately secure our information technology systems and the regulated data stored therein, as required by law;
- the impact of global economic and political developments on our business, including rising inflation and capital market disruptions; military conflicts in Ukraine and the Middle East; and economic sanctions and economic slowdowns or recessions that may result from such developments that could harm our research and development efforts as well as the value of our common stock and our ability to access capital markets;
- estimates regarding the sufficiency of our existing capital resources to fund our future operating expenses and capital expenditure requirements; and
- our anticipated use of our existing resources, capital requirements, and the timing of and need for additional financing.

The forward-looking statements in this Annual Report on Form 10-K are only predictions and are based largely on our current expectations and projections about future events and financial trends that we believe may affect our business, financial condition and results of operations. These forward-looking statements speak only as of the date of this Annual Report on Form 10-K and are subject to a number of known and unknown risks, uncertainties, and assumptions, including those described in the "Risk Factors" section in Part I, Item 1A of this Annual Report on Form 10-K and in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section in Part II, Item 7 of

this Annual Report on Form 10-K. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or may not occur and actual results could differ materially from those projected in the forward-looking statements. Moreover, we operate in a very competitive and rapidly evolving environment. New risk factors and uncertainties may emerge from time to time, and it is not possible for management to predict all risk factors and uncertainties. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances, or otherwise.

PART I

Item 1. Business.

Overview

We are a clinical-stage **C**lustered **R**egularly **I**nterspaced **S**hort **P**alindromic **R**epeats ("CRISPR") genome-editing biopharmaceutical company dedicated to developing transformative therapies for patients with devastating diseases. Our genome-editing platform, including our novel chRDNA (**C**RISPR **h**ybrid **R**NA-**DNA**, or "chRDNA," pronounced "chardonnay") technology, enables more precise genome editing to develop cell therapies that are armored to improve activity against diseases. We are advancing a pipeline of allogeneic, or off-the-shelf, cell therapies from our chimeric antigen receptor ("CAR") -T ("CAR-T") cell and CAR-natural killer ("CAR-NK") cell platforms as readily available therapeutic treatments for patients.

We are initially focused on advancing our allogeneic cell therapies for the treatment of hematologic malignancies. Our therapies are directed at established cell surface targets for which autologous CAR-T cell therapeutics have already demonstrated clinical proof of concept, including CD19 and B cell maturation antigen ("BCMA"), as well as targets such as C-type lectin-like molecule-1 ("CLL-1," also known as CD371). We use our chRDNA technologies to armor our cell therapies through multiple genome-editing strategies, such as checkpoint disruption, immune cloaking, or a combination of these two strategies, to enhance activity against devastating diseases.

Our Pipeline

Our pipeline includes three clinical-stage allogeneic cell therapies from our CAR-T cell platform targeting the treatment of hematologic malignancies. Our pipeline is shown below:



* Also known as CD371

Figure 1*. We are developing a pipeline of three clinical-stage allogeneic CAR-T cell therapies for the treatment of hematologic malignancies.*

Our Programs

Our lead product candidate, CB-010, is an allogeneic CAR-T cell therapy that is, to our knowledge, the first anti-CD19 allogeneic, or off-the-shelf, CAR-T cell therapy to be evaluated in patients with second-line relapsed or refractory large B cell lymphoma ("r/r LBCL"). To our knowledge, CB-010 is also the first clinical-stage allogeneic anti-CD19 CAR-T cell therapy with programmed cell death protein 1 ("PD-1") removed from the CAR-T cell surface by a genome-edited knockout of the *PDCD1* gene. We have demonstrated in preclinical models that the PD-1 knockout improved the durability of antitumor activity by disrupting a pathway that leads to rapid T cell exhaustion. CB-010 has received regenerative medicine advanced therapy ("RMAT") designation for r/r LBCL, fast track designation for relapsed or refractory B cell non-Hodgkin lymphoma ("r/r B-NHL"), and orphan drug designation for follicular lymphoma ("FL") from the U.S. Food and Drug Administration ("FDA").

CB-010 is being evaluated in our ongoing ANTLER phase 1 clinical trial in patients with r/r B-NHL. In the dose escalation portion of our ANTLER clinical trial, 16 patients were enrolled and treated with a single dose of CB-010. Three dose levels of CB-010 were evaluated: dose level 1 ($40x10^6$ viable CAR-T cells, n=8), dose level 2 ($80x10^6$ viable CAR-T

cells, n=5), and dose level 3 ($120x10^6$ viable CAR-T cells, n=3). CB-010 was generally well-tolerated with adverse events as expected for anti-CD19 CAR-T cell therapies. Based on these encouraging dose escalation data, we are evaluating CB-010 in second-line LBCL patients in the dose expansion portion of our ongoing ANTLER trial to determine the recommended phase 2 dose ("RP2D"). In the second quarter of 2024, we plan to present initial dose expansion data, the RP2D in second-line LBCL patients and emerging translational data from the ANTLER phase 1 clinical trial, as well as an updated timeline for the pivotal phase 3 trial initiation.

Our second product candidate, CB-011, is an allogeneic CAR-T cell therapy that is, to our knowledge, the first anti-BCMA CAR-T cell therapy incorporating an immune cloaking approach that includes both the removal of the endogenous beta-2 microglobulin ("B2M") protein and insertion of a beta-2-microglobulin–human-leukocyte-antigen-E–peptide transgene ("B2M–HLA-E"). This strategy is designed to reduce CAR-T cell rejection by both patient T cells and natural killer ("NK") cells to potentially enable more durable antitumor activity. CB-011 is being evaluated in our CaMMouflage phase 1 clinical trial in patients with relapsed or refractory multiple myeloma ("r/r MM"). Dose level 1 ($50x10^6$ viable CAR-T cells, n=3) and dose level 2 ($150x10^6$ viable CAR-T cells, n=3) have cleared in our CaMMouflage clinical trial without any observed dose-limiting toxicities ("DLTs"), and we are currently enrolling patients at dose level 3 ($450x10^6$ viable CAR-T cells). CB-011 has received fast track and orphan drug designations for r/r MM from the FDA. We plan to present initial dose escalation data from our CaMMouflage clinical trial by year-end 2024.

The third product candidate from our CAR-T cell platform is CB-012, an allogeneic CAR-T cell therapy targeting CLL-1 (also known as CD371). CB-012 is, to our knowledge, the first allogeneic CAR-T cell therapy with both checkpoint disruption and immune cloaking strategies, and its manufacture requires a total of five genome edits. We believe that CLL-1 is an attractive target for acute myeloid leukemia ("AML") due to its expression on myeloid cancer cells, its enrichment in leukemic stem cells, and its absence on hematopoietic stem cells ("HSCs"). We have dosed the first patient in our AMpLify phase 1 clinical trial, which is evaluating CB-012 at dose level 1 ($25x10^6$ viable CAR-T cells) in patients with relapsed or refractory AML ("r/r AML").

Additionally, we are developing our early research-stage allogeneic CAR-NK cell platform derived from genome-edited induced pluripotent stem cells ("iPSCs"). We have multiple armoring strategies in development for our CAR-NK cell platform, including a *Casitas B-Lineage lymphoma proto-oncogene-B* ("*CBLB*") gene knockout to enhance cell activity, IL-15/IL-15RA fusion gene insertion for enhanced cell persistence, and immune cloaking to reduce T cell-mediated rejection and to prevent NK cell fratricide (collectively, "NK cell self-killing"). As part of our regular portfolio prioritization process, we have paused the development of CB-020, a ROR-1-targeted CAR-NK cell therapy product candidate for the treatment of solid tumors. We are continuing to develop our CAR-NK cell platform and believe CAR-NK cells have potential for the treatment of multiple diseases.

Our CRISPR chRDNA Technologies

The genome-editing technologies currently used in the allogeneic cell therapy field generally have limited efficiency, specificity, and versatility for performing the multiple, precise genomic edits necessary to enhance efficacy and antitumor activity of these therapies. Our chRDNA technologies are designed to address these genome-editing limitations and improve the antitumor activity in allogeneic cell therapies. Our goal is to apply armoring strategies to our allogeneic cell therapies, which we believe could unlock their full potential by improving upon their effectiveness and antitumor activity.

We believe that our chRDNA technologies have broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology. Potential applications include immune cell therapies, cell therapies derived from genome-edited iPSCs, and *in vivo* genome-editing therapies. We own a robust worldwide patent portfolio protecting our Cas9 and Cas12a chRDNA technologies.

Our Team

Our team and our culture are critical to our mission to develop innovative, transformative therapies for patients with devastating diseases through our novel CRISPR chRDNA genome editing technology. We were founded in 2011 by globally-recognized pioneers in CRISPR genome editing and nucleic acid biology: Jennifer A. Doudna, Ph.D., who was a co-recipient of the 2020 Nobel Prize in Chemistry for the development of CRISPR-Cas9 as a method for genome editing; Martin Jinek, Ph.D., Associate Professor at the University of Zurich in the Department of Biochemistry; James Berger, Ph.D., Professor in the Department of Biophysics and Biophysical Chemistry at the Johns Hopkins University School of Medicine; and Rachel E. Haurwitz, Ph.D., who has served as our president and chief executive officer since our formation. Drs. Doudna and Jinek serve on our scientific advisory board ("SAB"), which also includes world experts in patient care, clinical trial development to support commercialization, immunotherapies, CAR-T cell development and microbiome

interactions, and NK cell biology. Our team of employees includes some of the scientists who invented the technologies we use today in our research and product development and who continue to drive innovation.

Genome-Editing Landscape and Limitations

Genome editing is a class of technologies that facilitate making specific changes to deoxyribonucleic acid ("DNA") sequences inside living cells. Canonical genome editing occurs in two steps, as shown in figure 2 below. In the first step, a double-stranded break ("DSB") is made at the location of the genome where the edit is desired. A cell typically has two ways to repair the DSB, which results in the knockout of a gene or the insertion of new genetic material: non-homologous end joining ("NHEJ") and homology-directed repair ("HDR"), respectively. NHEJ is an error-prone process in which the broken DNA ends are reattached. During NHEJ, the cell typically inserts or deletes a few nucleotides at the DSB. These insertions and deletions ("indels") destroy the coding sequence for the targeted gene, resulting in the knockout of the targeted sequence. HDR, by contrast, is a more controlled repair system where the cell incorporates donor DNA delivered during the experiment into the DSB, resulting in the site-specific insertion of the provided DNA sequence.

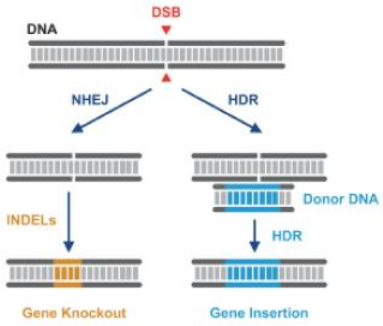


Figure 2. *Genome editing may be initiated by generating a DSB in chromosomal DNA at a desired location. The cell will seal the break by an error-prone process called NHEJ, leading to the formation of indels, resulting in a site-specific gene knockout. If a donor DNA template is provided to the cell during genome editing that encodes a gene of interest, a process called HDR will result in the insertion of the donor DNA in a site-specific manner.*

There are several well-established genome-editing technologies being applied to generate immune cell therapies currently in preclinical research or clinical development, including zinc-finger nucleases ("ZFNs"), transcription activator-like effector nucleases ("TALENs"), and meganucleases, but each has limitations with respect to both agility and ability to generate site-specific gene insertions with high efficiency. More recently, CRISPR genome-editing technology has been used for the generation of *ex vivo* immune cell therapeutics.

The canonical CRISPR system utilizes Cas9, an enzyme that can cut genomic DNA. Cas9 is targeted to a specific site in a genome by a guide ribonucleic acid ("RNA"). One of the drawbacks of CRISPR-Cas9 genome editing is the occurrence of off-target editing, edits that occur at sites in the genome other than at the intended target site. Off-target edits can alter an oncogene or tumor suppressor gene, impact the biology of the target cell, or have other negative consequences on therapeutic development. Additionally, the simultaneous occurrence of both on-target and off-target edits may lead to genomic rearrangements including chromosomal translocations that may be problematic for immune cell therapeutics, especially for ones requiring multiple edits.

Our CRISPR Hybrid RNA-DNA (chRDNA) Technologies

Overview

We deploy a new, next-generation CRISPR genome-editing platform, our novel chRDNA technologies, which uses hybrid guides containing both RNA and DNA for editing genomic DNA, providing a powerful tool with the potential to expand the use of allogeneic cell therapies. The advantages of our chRDNA technologies include:

- *Specificity:* Significantly fewer off-target events are observed using our chRDNA guides versus first-generation CRISPR-Cas9 or CRISPR-Cas12a systems using all-RNA guides. The improved genome-editing

specificity from the use of our chRDNA guides leads to a high degree of editing specificity with lower levels of off-target events. See figure 3 below.

- *High efficiency:* We achieve a high degree of on-target gene knockout and insertion efficiency, facilitating robust multiplex editing including multiple gene insertions. For example, for CB-011, Cas12a chRDNA genome editing leads to >60% of manufacturing-scale T cells with all four intended edits, including two separate site-specific gene insertions. See figure 4 below.
- *Versatility:* Our chRDNA guides are compatible with, and offer utility across, multiple cell types.
- *Simplicity:* Our chRDNA guides are manufactured via chemical synthesis using readily available technologies.

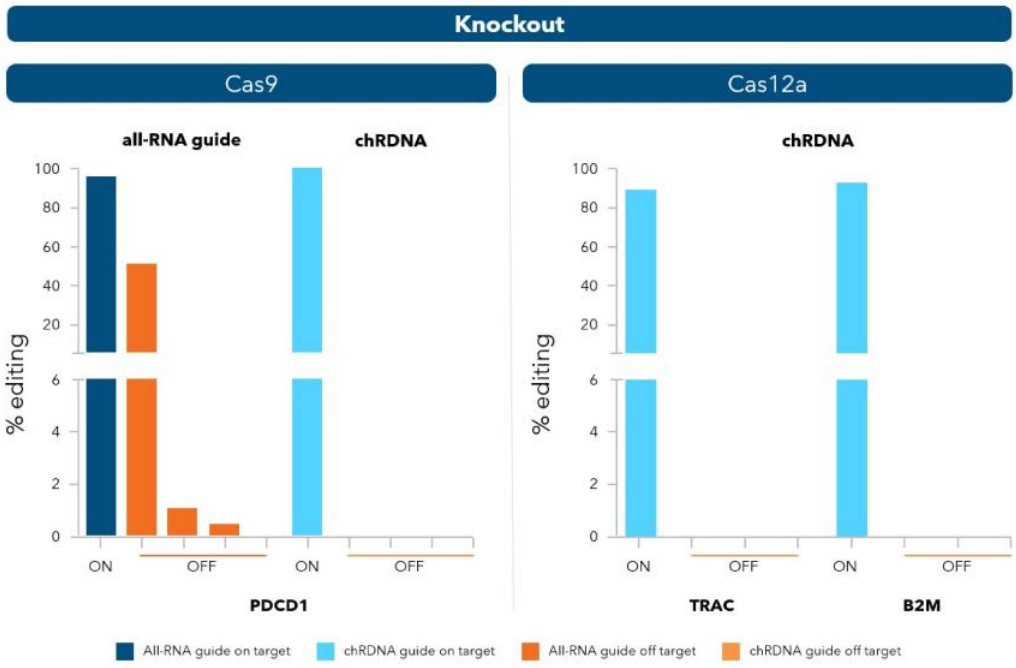


Figure 3. *chRDNA guides significantly improve genome-editing specificity relative to all-RNA guides.*

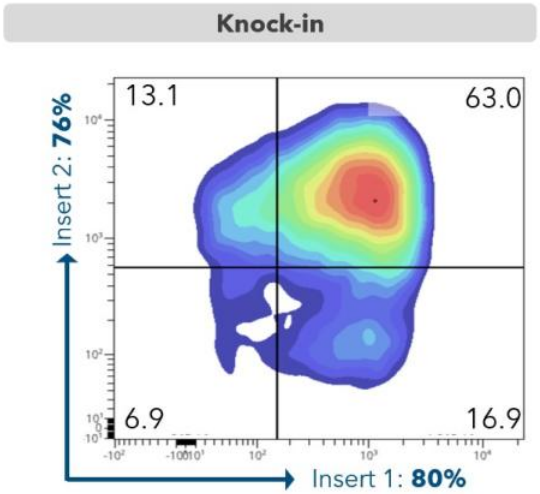


Figure 4. *Cas12a chRDNA genome editing mediates high rates of site-specific gene insertion. Cas12a chRDNA genome editing and adeno-associated virus serotype 6 ("AAV6") transduction leads to >60% of manufacturing-scale engineered T cells with all 4 edits (2 gene inserts and 2 gene knockouts).*

Our chRDNA Guides

Our chRDNA technologies use the canonical *Streptococcus pyogenes* Cas9 protein or the *Acidaminococcus sp.* Cas12a protein and a guide that is composed of a mixture of RNA and DNA nucleotides in both the region that interacts with the chromosomal target DNA and in the region that does not interact with the target DNA. The presence of DNA in a chRDNA guide significantly improves editing specificity relative to an all-RNA guide. Like Cas9, Cas12a is a CRISPR associated enzyme used to edit genomic DNA site-specifically. See figures 5 and 6 below.

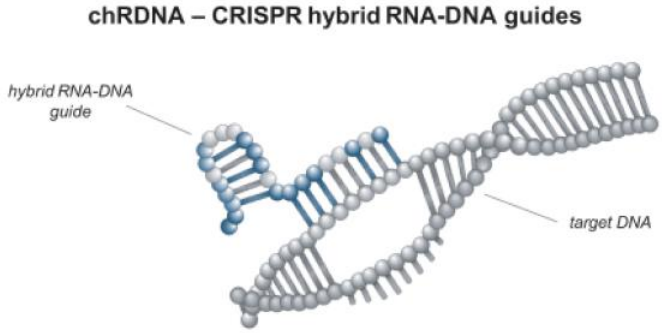


Figure 5. *Our next-generation chRDNA guides are hybrid molecules that contain both RNA and DNA nucleotides. They enable significantly improved specificity compared to first-generation all-RNA guides.*

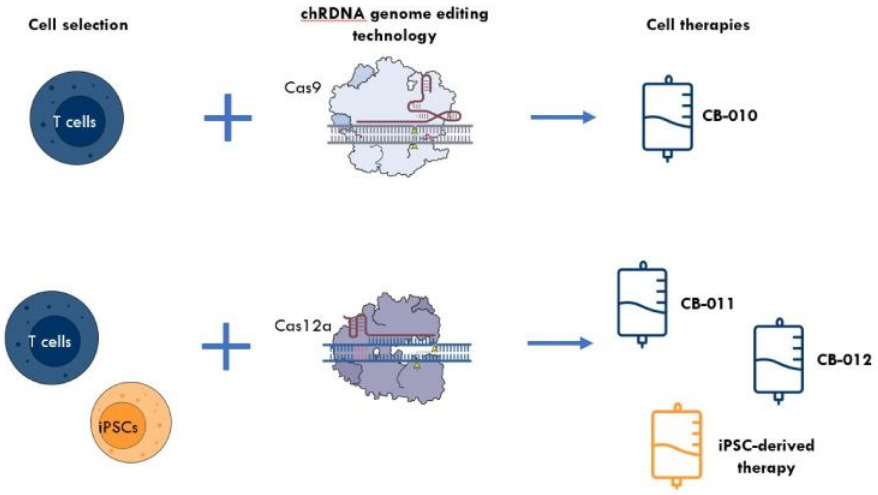


Figure 6. *We use our novel chRDNA guides with Cas9 or Cas12a in the development of our allogeneic cell therapies.*

Our chRDNA Guides: Highly Specific On-Target Genome Editing

Our chRDNA guides mediate higher genome-editing specificity as compared to all-RNA guides. Our chRDNA guides retain sufficiently high affinity to edit a genome at the intended location; however these guides have sufficiently low affinity for potential off-target sites to reduce the likelihood of a genome edit at an unintended location. We evaluated the integrity and performance of chRDNA guides by employing two unique assays, the SITE-Seq® assay and the VINE assay, on two genes known from the scientific literature to suffer from high rates of off-target editing with either the Cas9 or Cas12a protein. As seen in figure 3 above, all-RNA guides generated both robust on-target and off-target editing. We developed chRDNA guides that target the exact same genomic locations that achieve equivalent on-target editing compared to the all-RNA guides. In contrast to the all-RNA guides, the chRDNA guides induce minor to no detectable off-target editing. For any single genome edit, the chRDNA platform provides high specificity for use in our product candidates. We have generated chRDNA guides for Cas9 and for Cas12a targeting multiple distinct locations in the human primary T cell genome that lead to high efficiency and high specificity editing. We published an article in *Molecular Cell*, a peer-reviewed journal, on the mitigation of off-target editing using Cas9 chRDNAs (Donohoue, P.D. *et al.*, *Molecular Cell* 81, 3637–3649, September 2, 2021). Figure 3 above shows the increased editing specificity with Cas9 and Cas12a chRDNA guides relative to all-RNA guides.

Our chRDNA Guides: Achieve Equivalent, High Gene Knockout Efficiencies Compared to Conventional all-RNA Guides

The inclusion of DNA in our chRDNA guides does not impair their activity, and they achieve knockout efficiencies in human primary T cells with either the Cas9 or Cas12a protein that are equivalent to the knockout efficiencies achieved with all-RNA guides.

Our chRDNA Guides: Cas12a chRDNA-Mediated Editing Drives High Efficiency Gene Insertions

One of the challenges in the genome-editing field is obtaining a high degree of site-specific gene insertion. High efficiency gene knockout is achievable with a variety of genome-editing technologies, but achieving high efficiency gene insertion is more challenging. Either Cas9 or Cas12a can be used to insert a new gene into a genome. We use the combination of the Cas12a protein and our chRDNA guides to generate particularly high and reproducible gene insertion rates. Gene insertion requires delivery of the new gene into the target cells. To insert genes into T cells with our chRDNA technology, we transduce the cells with AAV6, which contains the DNA template of interest to facilitate the integration of the DNA into the double-stranded break generated by the Cas9 chRDNA complex or the Cas12a chRDNA complex via the HDR pathway.

As shown in figure 4 above, during full-scale current good manufacturing processes ("cGMP") manufacturing of CB-011 carried out by a contract manufacturing organization ("CMO"), we observed that approximately 76-80% gene insertion rates were achieved in human primary T cells edited with Cas12a chRDNAs, a significant rate compared to other genome-editing platforms, resulting in >60% of the T cell population containing all four desired edits. We demonstrated the insertion of a BCMA-specific CAR transgene, or Insert 1, into the *TRAC* locus by staining the edited T cells for the expression of the CAR following the knockout of the T cell receptor ("TCR"), via a *TRAC* knockout, and the insertion of the CAR transgene into the *TRAC* locus. In the same T cells, we demonstrated the insertion of a B2M–HLA-E fusion gene, or Insert 2, into the *B2M* locus by staining the edited T cells for the expression of HLA-E following the knockout of all class I antigens via a *B2M* knockout and the insertion of the B2M–HLA-E fusion gene into the *B2M* locus.

Immune Cell Therapies

Overview

Immune cell therapies have emerged as a revolutionary and potentially curative treatment for multiple kinds of cancers. The regulatory approval and commercialization of multiple first-generation CD19- and BCMA-directed autologous CAR-T cell products have laid the foundation and opened a path for the development of more advanced cell therapeutics, including CAR-T cell products with next-generation capabilities and approaches. Among these approaches, allogeneic cell therapy is positioned to unlock the broad potential of immune cells as a leading therapeutic modality. Expansion, trafficking, and sufficient antitumor activity of allogeneic CAR-T cells are critical to achieving long-term efficacy. We believe that the genome-editing technologies currently utilized in the allogeneic cell therapy field have limited specificity, efficiency, and versatility for performing the multiplex editing necessary to address these challenges.

Within the immune system, white blood cells, such as T cells and NK cells, are responsible for defending the body against not only pathogens but also abnormal cells, including cancer cells. Receptors on the surface of T cells enable them to recognize tumor cells and coordinate the activation of other cells in an immune response leading to the destruction of the cancerous cells. However, in many cases, cancer-specific T cells are not present in sufficiently high numbers or do not have the appropriate tumor specificity in a patient to eliminate a tumor.

Autologous immune cell therapies, the most advanced of which use T cells, are a class of therapies in which immune cells are removed from a patient's body and modified to express a CAR. A CAR is an engineered molecule that, when present on the surface of an immune cell, enables the immune cell to recognize specific proteins, or antigens, that are present on the surface of other cells, including cancer cells. To manufacture autologous CAR-T cell therapies, a cancer patient's own T cells are modified to express a particular CAR, grown outside the patient's body to expand their numbers, and then infused back into the same patient to recognize and destroy cancer cells in a targeted manner.

Allogeneic Cell Therapies

Despite the regulatory approvals and commercialization of autologous CAR-T cell therapies, several limitations have prevented autologous therapies from achieving the full potential of CAR-T cell products:

- *Limited patient access.* Many patients are not eligible for autologous therapy because of the quality of their T cells or the lengthy vein-to-vein time.
- *Bridging therapy often required.* Long wait times between the initial collection of the patient's T cells and the return of the manufactured cells back to the patient may require bridging therapy, an additional line of therapy.
- *Manufacturing constraints.* At present, there are a limited number of CAR-T cell centers and there are often insufficient manufacturing slots available to meet patient demand for autologous therapies. In addition, autologous cell manufacturing is complex and lengthy, and there can be manufacturing failures. The consequence of a manufacturing failure is that a patient might never receive their treatment.
- *High production costs limit scalability.* Due to the personalized nature of autologous therapy, only one patient can be treated from each manufacturing run; the supply chain logistics, including manufacturing and delivery, result in high costs with limited ability to scale.

- *Variable potency*. Often a patient's T cells may be damaged and weakened due to prior cancer treatments or the biology of their disease, which may lead to manufacturing failures or variable potency of the manufactured CAR-T cells with variability in clinical outcomes of the therapy.

Off-the-shelf, or allogeneic, versions of CAR-T cell therapies derived from healthy donors or stem cells are attractive options for several reasons.

- *Off-the-shelf availability.* Allogeneic CAR-T cells are manufactured in advance, are stored in inventory, and are available immediately for eligible patients, which significantly shortens wait time whereas autologous CAR-T cell therapies require patients to undergo leukapheresis and then wait for their individual therapy to be manufactured.

- *Broad patient access.* Allogeneic cell therapies derived from healthy donor cells have the potential to provide therapeutic options for patients who are ineligible for autologous CAR-T cell treatments due to the condition of their T cells or rate of disease progression.

- *Bridging therapy not required.* Patients receiving autologous cell therapy may require bridging therapy to treat their cancer from the time their T cells are collected until their CAR-T cell therapy is manufactured and administered. Patients receiving allogeneic cell therapy, however, do not have to wait for their CAR-T cell therapy to be manufactured and thus may avoid the potential need for bridging therapy.

- *More efficient and scalable manufacturing.* Allogeneic approaches utilize cells from healthy donors or stem cells, resulting in a streamlined manufacturing process and enhanced scalability relative to autologous cell therapies where each patient requires their own batch of cell therapy.

- *Healthy donor cells engineered with genome-editing strategies for enhanced activity against disease.* Allogeneic cell therapies are prone to rapid rejection by a patient's immune system, thus limiting antitumor activity. Donor-derived or stem cell-derived allogeneic cell therapies can be armored via one or multiple genome-editing strategies with the intent of enhancing activity against disease.

Our Strategy

Key Components of our Strategy

Our mission is to develop innovative, transformative therapies for patients with devastating diseases through our novel chRDNA genome editing. Our overarching goal is to build an integrated company that discovers, develops, manufactures, and commercializes genome-edited therapies that have the potential to treat patients with significant unmet needs. Our initial focus is on allogeneic cell therapies for hematologic malignancies, and our chRDNA technologies offer broad potential applications longer-term.

Key components of our strategy include:

- *Applying our chRDNA genome-editing technology to engineer allogeneic cell therapies from our CAR-T and CAR-NK platforms that have the potential for durable activity against disease.* Our chRDNA technologies enable us to design allogeneic cell therapies with the potential to achieve enhanced cell killing activity through the use of tailored armoring strategies, including (i) checkpoint disruption, such as through a knockout of PD-1 to sustain the initial activity of CAR-T cells by disrupting a pathway that leads to CAR-T cell exhaustion; (ii) immune cloaking of CAR-T cells to reduce rejection by the patient's immune system; (iii) cytokine support to enhance antitumor activity; and (iv) a combination of these strategies.

- *Developing allogeneic CAR-T cell therapies against clinically proven targets for the treatment of hematologic malignancies.* CB-010 is being evaluated in our ANTLER phase 1 clinical trial in patients with r/r B-NHL, and CB-011 is being evaluated in our CaMMouflage phase 1 clinical trial in patients with r/r MM. CB-010 is directed to the CD19 antigen and CB-011 is directed to the BCMA antigen. These targets have been clinically proven in autologous CAR-T cell therapies that have received regulatory approvals, which reduces target risk as we evaluate the safety, antitumor activity, and duration of response of our clinical-stage allogeneic CAR-T cell therapies.

- *Developing additional allogeneic CAR-T cell therapies against new targets for the treatment of hematologic malignancies.* Immune cell therapies have emerged as an exciting and powerful approach for difficult-to-treat

hematologic malignancies in patients with limited treatment options. We are applying our chRDNA platform and insights from our more advanced programs to design allogeneic CAR-T cell therapies against targets, such as CLL-1, for diseases for which there are no approved autologous CAR-T cell therapies, such as AML. Our CB-012 product candidate is directed to the CLL-1 target and is being evaluated in our AMpLify phase 1 clinical trial in patients with r/r AML.

- *Developing our research-stage CAR-NK cell platform by leveraging our iPSC-derived NK cell ("iNK") capabilities.* We believe NK cells are a promising cell type for disease treatment. We have developed robust protocols to edit iPSCs and to differentiate and expand them into iNK cells.

- *Reinforcing our leadership in CRISPR genome editing through strategic investments in our platform and new technologies.* Our company was founded by leaders in CRISPR biology and the core of our company is based on genome editing technologies protected by a robust IP portfolio. We will continue to invest in these areas to maintain our prominence in the field and to develop therapies in which our genome edits confer potential benefits to patients.

- *Further expanding patient access to cell therapies via selective strategic collaborations.* We plan to seek opportunities with select collaborators as appropriate to accelerate our ability to develop therapeutics to address significant unmet medical need.

- *Pursuing potential indications both within and outside of oncology, selectively on our own and through strategic collaborations.* We believe that our technology has broad potential to generate gene and cell therapies in oncology and in therapeutic areas beyond oncology. Potential applications include immune cell therapies and *in vivo* genome-editing therapies. We aspire to maximize the value of our technologies and capabilities for patient benefit through internal investment and development and collaborations.

Multiplex Genome-Editing Strategy Using our chRDNA Technologies

Using our chRDNA genome-editing technologies, we have successfully demonstrated multiplex genome editing while maintaining genomic integrity. We believe this level of editing sophistication has the potential to unlock the broad use of allogeneic cell therapies by:

- *Increasing the antitumor activity of allogeneic cell therapies, thereby potentially achieving long-term efficacy:* Our chRDNA technologies enable us to apply tailored armoring strategies to our allogeneic CAR-T cells, including (i) checkpoint disruption, through the knockout of PD-1 to sustain the initial activity of CAR-T cells by disrupting a pathway that leads to CAR-T cell exhaustion, (ii) immune cloaking of CAR-T cells to reduce rejection by the patient's immune system, and (iii) a combination of these two strategies. See figure 7 below. Our CB-010 preclinical mouse xenograft data demonstrate that the PD-1 knockout results in a significant survival advantage compared to conventional allogeneic CAR-T cells without a PD-1 knockout.

- *Improving the genomic integrity of our products*: We have observed that our product candidates have significantly lower levels of off-target edits compared to those made with first-generation CRISPR-Cas9, and we believe we can make multiple edits while maintaining genomic integrity.

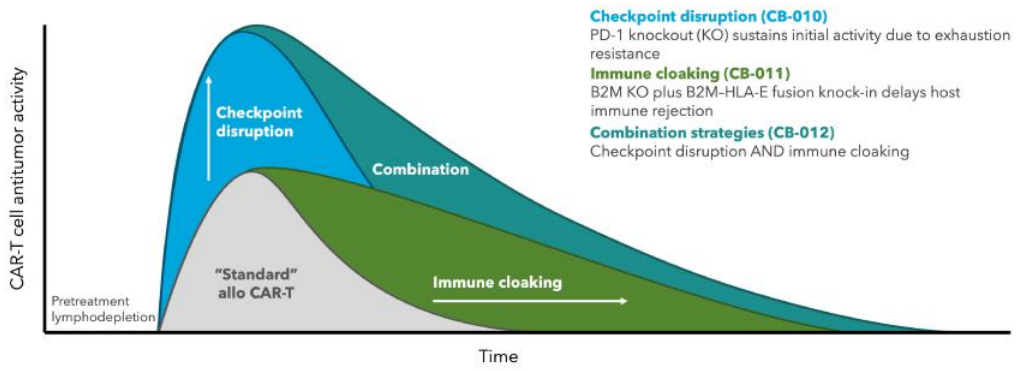


Figure 7. *We employ multiple armoring strategies to engineer allogeneic CAR-T cell therapies with the potential for durable antitumor activity.*

Engineering Enhanced Antitumor Activity is the Key to Unlocking the Full Potential of Allogeneic Cell Therapies

CAR-T cells will generally proliferate in response to antigen engagement via their respective CAR. However, allogeneic CAR-T cells are rapidly rejected by a patient's immune system due to their divergent donor-derived genetic profile. We believe engineering CAR-T cells to achieve enhanced antitumor activity is necessary for the realization of the full potential of allogeneic cell therapies. Furthermore, development of an allogeneic CAR-T cell therapy requires genome editing to remove proteins from donor T cells that may recognize and attack a patient's tissue that, without removal, would pose a risk of graft versus host disease ("GvHD").

Our Approach: Armoring Cell Therapies for Enhanced Antitumor Activity

We believe that engineering enhanced antitumor activity is the key to unlocking the full potential of allogeneic cell therapies. Our strategies to improve CAR-T cell antitumor activity are three-fold: (i) checkpoint disruption, through a knockout of PD-1 to sustain the antitumor activity of CAR-T cells by disrupting a pathway that leads to CAR-T cell exhaustion, (ii) immune cloaking the CAR-T cells to blunt rapid rejection by the patient's immune system, and (iii) a combination of these two strategies. Similar approaches may be used for our CAR-NK cell platform where improved targeting, CAR-NK cell survival, and enhancement of cell activity is thought to be key.

Checkpoint Disruption with PD-1 Knockout Strategy

One of the approaches we deploy to increase the antitumor activity of CAR-T cells is to remove PD-1 from the CAR-T cell surface. The PD-1/PD-L1 pathway leads to rapid exhaustion of T cells. This occurs when a T cell expressing PD-1 engages with another cell expressing PD-L1. Tumor cells and the patient's own cells can express PD-L1, leading to interaction with PD-1 and subsequent exhaustion of the CAR-T cells. We use our chRDNA technology to knockout the *PDCDI* gene to eliminate PD-1 expression from the CAR-T cell surface, thereby preventing PD-1/PD-L1-mediated exhaustion. We believe that knocking out PD-1 will maintain the CAR-T cells in a higher antitumor state for an extended period of time, and we believe this will result in greater initial tumor debulking in the patient. To our knowledge, our CB-010 product candidate is the first allogeneic CAR-T cell therapy in a clinical study with a PD-1 knockout, and we believe the PD-1 knockout enhances the potential for durable antitumor response of an allogeneic CAR-T cell therapy.

Immune-Cloaking Strategy

Another approach we deploy to increase the persistence of CAR-T cell antitumor activity is to immune cloak our CAR-T cells to reduce rapid immune-mediated rejection. The goal of immune cloaking is to maintain the allogeneic CAR-T cells in circulation for an extended period of time. Allogeneic CAR-T cells are foreign to the patient's immune system and, unless modified, will be rapidly rejected. We use our Cas12a chRDNA technology to make multiple edits to T cells to immune cloak them and limit the rapid rejection by both the patient's cytotoxic T cells and NK cells. Our edits remove all endogenous HLA class I antigens from the CAR-T cell surface and lead to the overexpression of HLA-E, a minor HLA antigen, on the CAR-T cell surface. The lack of endogenous HLA class I antigens and the presence of only HLA-E are

designed to prevent the patient's T cells and NK cells from rapidly rejecting the allogeneic therapy. These cells are unlikely to persist indefinitely, and ultimately other types of immune cells in the patient will eliminate the allogeneic CAR-T cells. Our edits are designed to maintain the CAR-T cells in circulation longer to enhance the antitumor response of the CAR-T cell therapy to destroy a larger proportion of the targeted tumor cells.

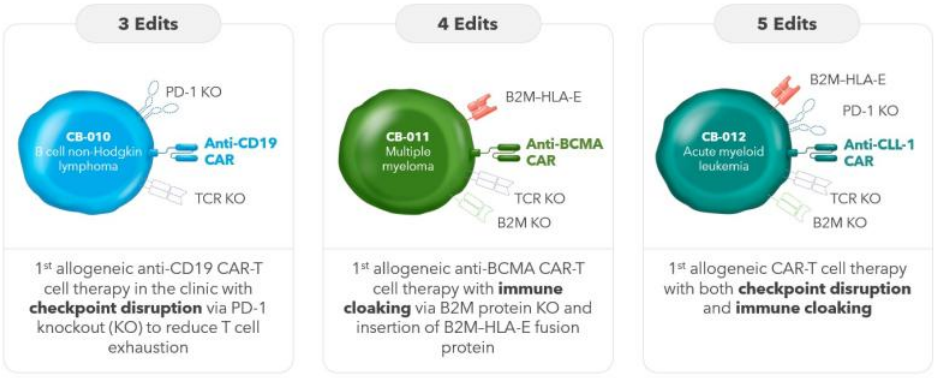


Figure 8. *We use our novel chRDNA technologies to perform multiple genome edits to introduce armoring strategies intended to enhance antitumor activity and persistence of the cell therapy.*

Our Pipeline

We are advancing a pipeline of three clinical-stage allogeneic CAR-T cell therapies focused on the treatment of hematologic malignancies. Our pipeline is set forth in figure 9 below.



* Also known as CD371

Figure 9. *We are developing a pipeline of three clinical-stage allogeneic CAR-T cell therapies for hematologic malignancies.*

CB-010

Overview: Strategy and Rationale

Our lead product candidate is CB-010, a healthy donor-derived, genome-edited, allogeneic CAR-T cell therapy targeting CD19-positive malignancies, being evaluated in the ongoing first-in-human, open-label, multicenter ANTLER phase 1 clinical trial (NCT04637763) in the United States, Australia, and Israel in adults with r/r B-NHL. CB-010 is designed to prevent rapid CAR-T cell exhaustion and confer a better therapeutic index compared to other allogeneic CAR-

T cell therapies. To manufacture CB-010, we make three modifications to healthy donor-derived T cells using our Cas9 chRDNA genome-editing technology:

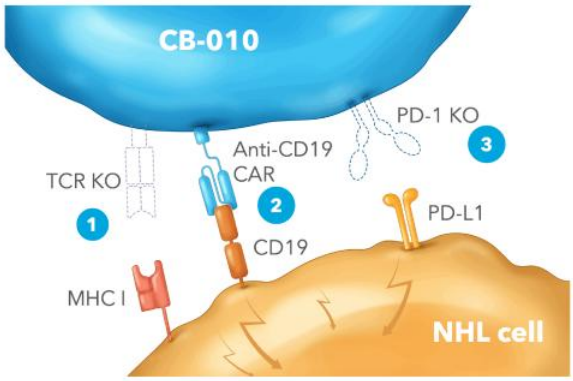


Figure 10. *CB-010 has a PD-1 knockout for potentially enhanced activity against disease.*

1. *TRAC knockout:* We knock out the *TRAC* gene in order to eliminate expression of the TCR from the surface of the CAR-T cells. The removal of TCR expression is intended to eliminate the risk of GvHD in patients.

2. *Site-specific insertion of the anti-CD19 CAR:* We insert the CD19-targeted CAR into the *TRAC* gene by AAV6 transduction and HDR.

3. *PD-1 knockout:* We knock out the *PDCD1* gene, which encodes for PD-1, a checkpoint receptor, for enhanced antitumor activity, potentially leading to a better therapeutic index.

To our knowledge, CB-010 is the first allogeneic CAR-T cell therapy in the clinic with a PD-1 knockout. Other CAR-T cell therapies that express endogenous PD-1 could become rapidly exhausted and lose antitumor activity due to the interaction between PD-1 and its ligand PD-L1. The PD-1/PD-L1 pathway leads to rapid exhaustion in T cells. This occurs when a T cell expressing PD-1 engages with another cell expressing PD-L1. B cell tumors and the patient's own cells can express PD-L1, leading to interaction with PD-1 and subsequent exhaustion of the CAR-T cells. We eliminate PD-1 expression from the CB-010 CAR-T cells, thereby preventing PD-1/PD-L1-mediated exhaustion. More than half of B-NHL tumors express PD-L1, and expression of PD-L1 in B-NHL correlates with poorer outcomes. We believe that knocking out PD-1 will maintain the CAR-T cells in a higher antitumor state for an extended period of time, which we believe will result in greater initial tumor debulking in the patient, thereby enabling a potentially better therapeutic index relative to PD-1-expressing CAR-T cells.

Target Indication

We are developing CB-010 for the treatment of r/r B-NHL, with a focus on second-line LBCL. NHL is the most common hematologic malignancy with an estimated 80,500 cases, or 4% of all cancers, diagnosed in the United States in 2023 according to the National Cancer Institute SEER database. LBCL is a subtype of B-NHL and typically presents as a rapidly growing mass or enlarging lymph nodes in a nodal or extranodal site. LBCL subtypes include diffuse large B cell lymphoma not otherwise specified ("DLBCL NOS"), high-grade B cell lymphoma ("HGBL"), primary mediastinal large B cell lymphoma ("PMBCL"),transformed follicular lymphoma ("tFL"), and transformed marginal zone lymphoma ("tMZL"). In 2022, approximately 10,000 second-line LBCL patients were newly diagnosed in the US.

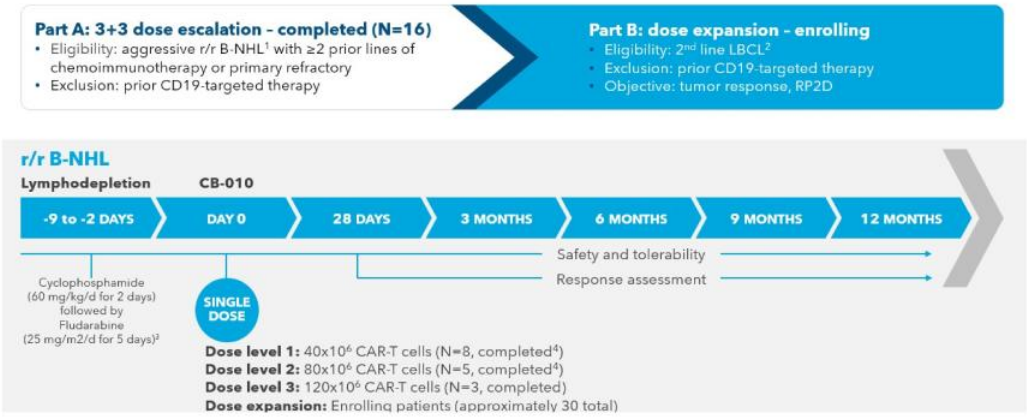
Overall, for aggressive r/r B-NHL, newer immunologically-mediated therapies under investigation include checkpoint inhibitors, bispecific antibodies, and CAR-T cells. FDA-approved autologous CD19-specific CAR-T cell therapies have shown significant complete response rates, improved progression-free survival, and extended overall survival. Despite the clinical benefits of these FDA-approved autologous CAR-T cell therapies, they are expensive and challenging to manufacture, and many patients are ineligible, cannot wait the long vein-to-vein time, and may require bridging therapy. Thus, there remains a significant unmet medical need for patients with r/r B-NHL.

ANTLER Phase 1 Clinical Trial for CB-010 in r/r B-NHL

CB-010 is being evaluated in our ANTLER phase 1 clinical trial for the treatment of adult patients with aggressive forms of r/r B-NHL. In dose escalation, CB-010 was evaluated in patients with several aggressive subtypes of r/r B-NHL, the majority of which were third-line or later. In the ongoing dose expansion portion of ANTLER, CB-010 is being evaluated in second-line patients with LBCL. To our knowledge, CB-010 is the first anti-CD19 allogeneic CAR-T cell therapy to be evaluated in the second-line LBCL setting. Our ANTLER trial currently excludes patients who have previously received CD19-targeted therapy.

Patients in our ANTLER phase 1 clinical trial receive a lymphodepletion regimen prior to CAR-T cell infusion. The lymphodepletion regimen includes two chemotherapy agents, cyclophosphamide and fludarabine, which are generally used for lymphodepletion prior to autologous CAR-T cell therapy. To ensure optimal engraftment of the allogeneic CB-010 cells, we use a more intensive regimen of these chemotherapeutic agents than is used with the commercially approved autologous CAR-T cell therapies, namely cyclophosphamide at 60 mg/kg/day for 2 days, then fludarabine at 25 mg/m^2/day for 5 days. The objectives of our ANTLER trial include the assessment of safety, including the incidence of DLT adverse events within 28 days after CB-010 infusion, as well as the overall objective response rate and the identification of the RP2D, as shown in figure 11 below.

Our ANTLER phase 1 clinical trial consists of two parts and we estimate enrolling up to approximately 60 patients across multiple centers in the United States and internationally. Part A was a dose escalation following a standard 3 + 3 design, with sequential, increasing single doses of CB-010, and was completed with 16 patients dosed. Part B is the dose expansion portion where CB-010 is evaluated to determine the RP2D in second-line LBCL patients. The FDA granted CB-010 RMAT designation for r/r LBCL, fast track designation for r/r B-NHL, and orphan drug designation for FL.

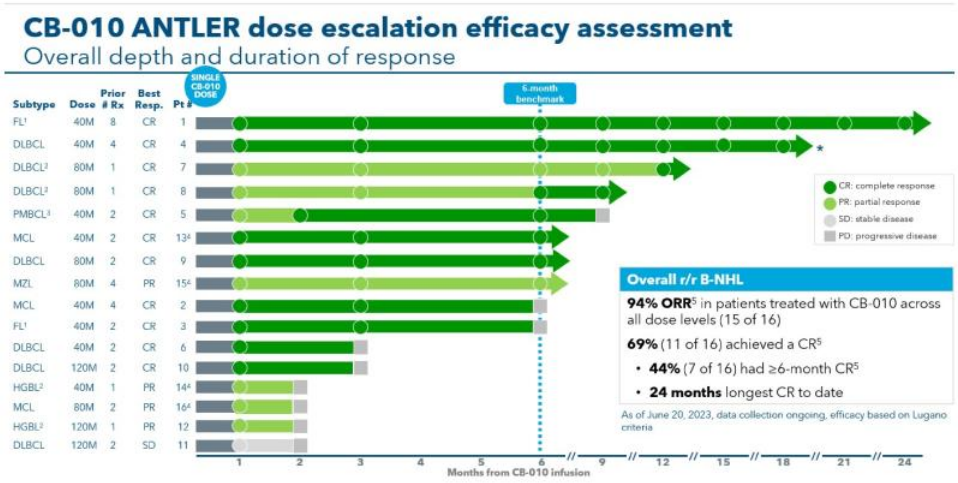


[1] Subtypes include: diffuse large B cell lymphoma ("DLBCL"), high-grade B cell lymphoma ("HGBL"), transformed DLBCL from FL ("tFL"), primary mediastinal large B cell lymphoma ("PMBCL"), FL (aggressively behaving with POD24 (high risk)), and marginal zone lymphoma ("MZL").
[2] LBCL subtypes include: DLBCL NOS, HGBL, transformed DLBLC from FL or MZL, and PMBCL.
[3] Clin Cancer Res. 2011 July 1; 17(13): 4550–4557. doi:10.1158/1078-0432.CCR-11-0116
[4] Includes two backfill patients at dose level 1 and two backfill patients at dose level 2.

Figure 11. *Our ANTLER phase 1 clinical trial is designed to evaluate CB-010 in r/r B-NHL patients. The study consists of two parts: Part A is a dose escalation with a 3 + 3 design, with sequential, increasing single doses in patients with r/r B-NHL. Part B is the expansion portion where CB-010 is evaluated to determine the RP2D in second-line LBCL patients.*

ANTLER Phase 1 Trial Clinical Data for CB-010

On July 13, 2023, we announced the following positive results of the long-term follow-up from the dose escalation portion of our ANTLER phase 1 trial.



[1] Aggressively behaving, with disease progression within 24 months of front-line chemoimmunotherapy (POD24), which is high risk.
[2] Primary refractory disease.
[3] The three-month scan for patient 5 was conducted on day 63 post-CB-010 infusion, pursuant to the investigator's discretion.
[4] Patients 13-16 are backfill patients at the $40x10^6$ cells and $80x10^6$ cell doses.
[5] Overall response rate ("ORR"). Certain patients with initial complete response ("CR") or partial response ("PR") progressed to progressive disease ("PD") at various assessment time points as indicated in the chart.
* Update on patient 4 presented at Lymphoma Leukemia & Myeloma Congress 2023; CR is ongoing through month 21.

Figure 12. *Results from the dose escalation portion of our ongoing ANTLER phase 1 clinical trial showed a 94% ORR (15 of 16 patients) following a single dose of CB-010; 69% of patients (11 of 16) achieved a CR; and 44% of patients (7 of 16) had a CR at 6 months or after (24 months is the longest CR maintained to date).* (*Data as of July 13, 2023, data collection ongoing, efficacy based on Lugano criteria*.)

Safety results from patients at all three dose levels showed CB-010 was generally well-tolerated with adverse events ("AEs") consistent with autologous or allogeneic anti-CD19 CAR-T cell therapies. No grade 3+ cytokine release

syndrome (CRS) and no GvHD cases were observed. The most common AEs included thrombocytopenia (69% grade 3+), neutropenia (56% grade 3+), and anemia (50% grade 3+). See details in figure 13 below.

Event (N=16)	Any Grade[1] N (%)	All Grade 3+ N (%)	Related Grade 3+ N (%)
Total number of TEAEs, N	**348**	**96**	**28**
Subjects with TEAE, n (%)	**15 (94)**	**14 (88)**	**8 (50)**
Thrombocytopenia/platelet count decreased	11 (69)	11 (69)	5 (31)
Anemia	11 (69)	8 (50)	1 (6)
Neutropenia/Neutrophil count decreased	10 (63)	9 (56)	1 (6)
Cytokine release syndrome	7 (44)	-	-
White blood cell count decreased	7 (44)	7 (44)	4 (25)
Fatigue	4 (25)	-	-
Lymphocyte count decreased	4 (25)	3 (19)	1 (6)
Blood creatinine increased	4 (25)	-	-
ICANS (immune effector cell-associated neurotoxicity)	4 (25)	2 (13)	2 (13)
Fall	3 (19)	-	-
Diarrhea	3 (19)	-	-
Hypoalbuminemia	2 (13)	-	-
Hypocalcemia	2 (13)	-	-
Hyponatremia	2 (13)	-	-
Muscular weakness	2 (13)	-	-
Febrile neutropenia	2 (13)	2 (13)	1 (6)
Syncope	2 (13)	2 (13)	-
Pulmonary embolism	2 (13)	1 (6)	-
Atrial fibrillation	1 (6)	1 (6)	1 (6)
Acute kidney injury	1 (6)	1 (6)	-
Cellulitis	1 (6)	1 (6)	-
Encephalopathy[2]	1 (6)	1 (6)	1 (6)
Hyperglycemia	1 (6)	1 (6)	-

[1] TEAEs are defined as adverse events (AEs) with a start date on or after the CB-010 infusion date.
[2] Encephalopathy and grade 4 ICANS events were related and occurred in same patient. Table includes AEs with at least two subjects at any single dose level or at least one subject with a higher than grade 3 TEAE. (As of May 4, 2023 data cutoff date.)

Figure 13. *Results from the dose escalation portion of our ongoing ANTLER phase 1 clinical trial show CB-010 was generally well-tolerated with such adverse events as are expected for anti-CD19 CAR-T cell therapies.*

We are currently evaluating CB-010 in patients with second-line r/r LBCL in our ANTLER phase 1 clinical trial. On December 12, 2023, we announced that we had received feedback from the FDA following a Type B clinical meeting and recent communications regarding CB-010. The FDA provided feedback on a phase 3 randomized controlled trial for CB-010 for patients with r/r LBCL, stating that our proposed comparator arm of platinum-based immunochemotherapy followed by high dose chemotherapy and autologous stem cell transplantation is acceptable. In the second quarter of 2024, we plan to present initial dose expansion data, the RP2D in second-line LBCL patients and emerging translational data from the ANTLER phase 1 clinical trial, as well as an updated timeline for the pivotal phase 3 trial initiation.

CB-011

Overview: Strategy and Rationale

CB-011 is a healthy donor-derived, genome-edited, allogeneic CAR-T cell therapy targeting BCMA-positive malignancies that is being evaluated in the ongoing open-label, multicenter CaMMouflage phase 1 clinical trial (NCT05722418) in the United States in adults with r/r MM. The CB-011 cells express a potent, humanized anti-BCMA CAR that exhibits better performance in preclinical *in vivo* antitumor activity assays compared to other anti-BCMA CARs

we evaluated. We acquired a novel humanized scFv directed to BCMA that we use for the generation of the BCMA-specific CAR in CB-011.

We believe that the edits we make to immune cloak the product will maintain the CB-011 cells in the patient's circulation longer. We make four genome edits using the Cas12a chRDNA technology to manufacture CB-011 as shown in figure 14 below.

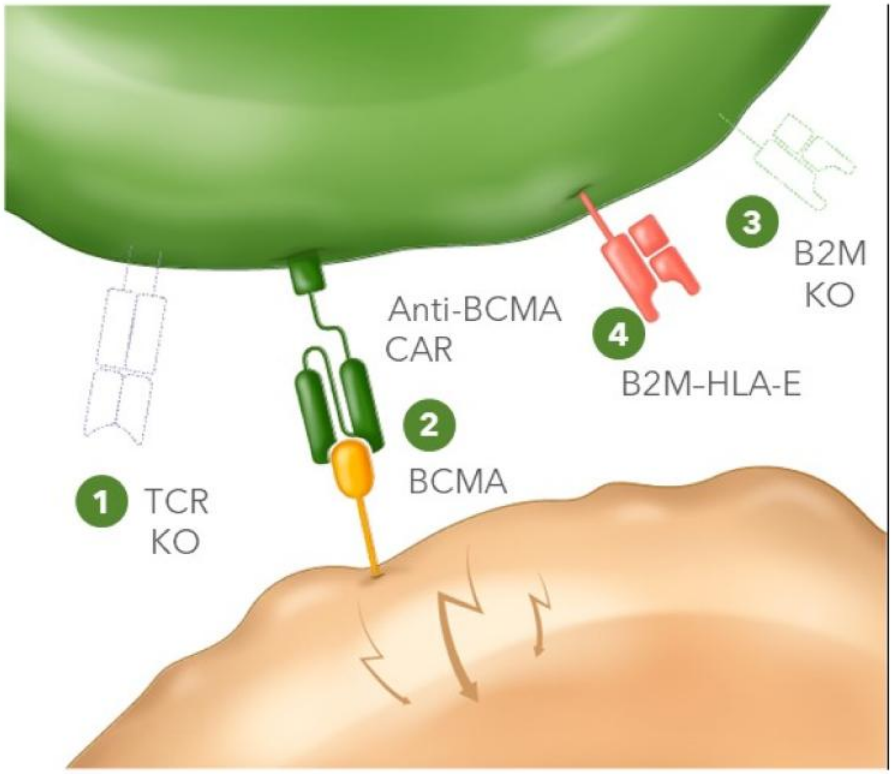


Figure 14. *CB-011 is engineered with an immune cloaking strategy to potentially improve antitumor activity. CB-011 has a BCMA-specific CAR insertion, a knockout of the TCR, an insertion of a B2M–HLA-E fusion protein, and a knockout of B2M.*

1. *TRAC knockout:* We knock out the *TRAC* gene to eliminate expression of the TCR from the surface of the CAR-T cells. The removal of TCR expression is intended to prevent GvHD in patients.

2. *Site-specific insertion of the humanized anti-BCMA CAR:* We insert the BCMA-targeted CAR into the *TRAC* gene by AAV6 transduction and homology-directed repair.

3. *B2M knockout:* We knock out the *B2M* gene, which encodes for a protein necessary for the presentation of HLA class I molecules on the surface of a T cell. The disruption of the *B2M* locus yields a cell product that does not express endogenous HLA class I molecules, limiting the ability of the patient's cytotoxic $CD8^+$ T cells to detect and reject the CAR-T cell therapy.

4. *Site-specific insertion of a B2M–HLA-E fusion protein:* We site-specifically insert a transgene that fuses B2M, HLA-E, and a peptide by AAV6 transduction and homology-directed repair. HLA-E is a minor class I antigen that interacts with NK cells. This insertion, combined with the *B2M* gene knockout, yields a cell product that has only HLA-E, and no other class I antigens, on its surface. The presence of only HLA-E is designed to prevent both the patient's T cells and NK cells from rapidly rejecting the therapy.

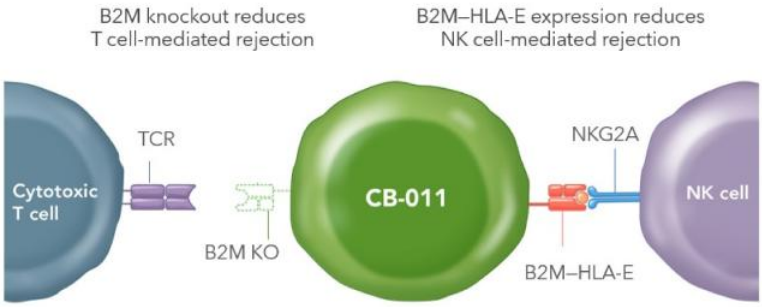


Figure 15. *Our CB-011 immune cloaking strategy is intended to reduce both T cell- and NK cell-mediated rejection.*

Unmodified CAR-T cells, those that have intact HLA class I antigens, are subject to rejection by the patient's cytotoxic T cells once the T cells recognize the allogeneic CAR-T cells as foreign. This is mediated by the presentation of peptides by the CAR-T cells via their HLA class I antigens to the patient's immune system that will recognize them as foreign since the CAR-T cells are derived from a non-familial healthy donor. If we only knock out the *B2M* gene, thereby eliminating all HLA class I antigens, the cytotoxic T cells of the patient would no longer recognize the CAR-T cells as foreign. However, the NK cells of the patient would detect the lack of HLA class I antigens, a concept known as "missing self," which would unleash the activity of the NK cells, enabling them to destroy the allogeneic CAR-T cells. We engineer the CB-011 CAR-T cells with the intent to protect them from rejection by both the patient's cytotoxic T cells and NK cells by removing endogenous HLA class I antigen presentation through the knockout of the *B2M* gene and by inserting a B2M–HLA-E fusion transgene into the *B2M* locus. We believe that this strategy will enable the CB-011 CAR-T cells to remain in circulation longer in patients to potentially provide durable antitumor activity.

Target Indication

We are developing CB-011 for the treatment of r/r MM. In 2023, 1.8% of all cancers were MM. The median age of diagnosis is 69 years, and there were an estimated 35,730 new cases in 2023 in the United States with an estimated 12,590 deaths in 2023. Five-year survival in these patients is approximately 58%.

There has been significant interest in and activity against BCMA as a target over the past few years with the regulatory approval of two new autologous CAR-T cell therapy products and a bispecific antibody targeting BCMA. Despite the clinical benefits of commercial autologous CAR-T cell therapies, they are expensive and challenging to manufacture, and many patients are ineligible; bispecific antibodies require patients to receive frequent treatments and are associated with high infection rates.

Additionally, many treatments for MM are multidrug regimens comprising varying routes of administration and/or convoluted dosing schedules; these regimens can be complex and burdensome for both patients and physicians. The need for simplified dosing schedules remains. Thus, although we expect that approvals of additional therapies may serve to partially mitigate the need for more treatment options in r/r MM, therapies that prolong the lives of r/r MM patients or delay disease progression, address simpler manufacturing, and streamline dosing schedules are critical to address the unmet medical need in patients with r/r MM.

CaMMouflage Phase 1 Clinical Trial for CB-011 in r/r MM

We are evaluating CB-011 in our CaMMouflage phase 1 clinical trial in adult patients with r/r MM. These patients have a documented diagnosis of active MM according to International Myeloma Working Group diagnostic criteria. The patient population includes individuals for whom three or more lines of therapy, including a proteosome inhibitor ("PI"), an immunomodulatory drug ("IMiD"), and an anti-CD38 antibody, have failed. Patients who have received a BCMA-targeted therapy within the last three months and/or prior CAR-T cell therapy are excluded from the trial.

Patients in our CaMMouflage phase 1 clinical trial receive a chemotherapy regimen prior to CAR-T cell infusion. The chemotherapy regimen includes two agents, cyclophosphamide (300 mg/m^2/day) and fludarabine (30 mg/m^2/day) for

three days, which are generally used for lymphodepletion in these doses prior to autologous CAR-T cell therapy. CB-011 is infused two days after completion of lymphodepletion (on Day 0). The objectives of the trial include the assessment of safety, including the incidence of adverse events defined as dose-limiting toxicities after CB-011 infusion, as well as the overall objective response rate and the identification of the maximum tolerated dose ("MTD") and RP2D, as shown in figure 16 below. In our CaMMouflage trial, dose level 1 ($50x10^6$ viable CAR-T cells, n=3) and dose level 2 ($150x10^6$ viable CAR-T cells, n=3) have cleared without any DLTs, and we are enrolling patients at dose level 3 ($450x10^6$ viable CAR-T cells) for the dose escalation portion of this trial. CB-011 has received fast track and orphan drug designations for r/r MM from the FDA. We plan to present initial dose escalation data from our CaMMouflage clinical trial by year-end 2024.

Our CaMMouflage phase 1 clinical trial is being conducted in two parts across multiple centers in the United States. Part A is a dose escalation following a standard 3 + 3 design, with sequential, increasing single doses of CB-011. Part B is the expansion portion where patients receive CB-011 at the dose levels determined in Part A to determine the RP2D. The trial design also optionally permits the dosing of backfill patients at previously cleared dose levels.

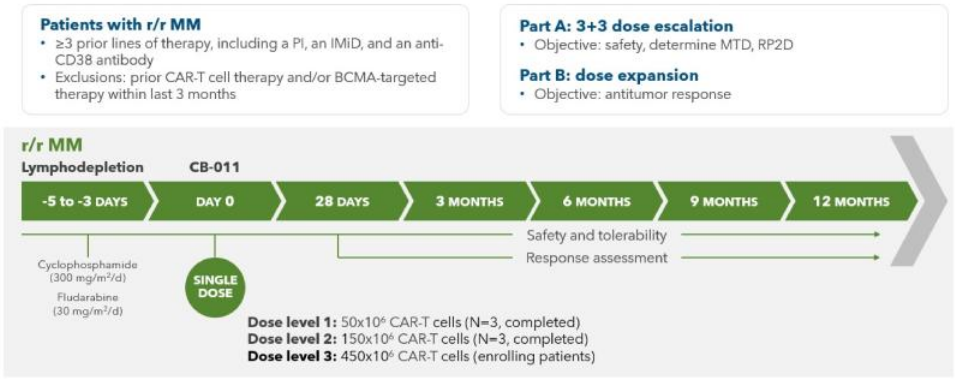
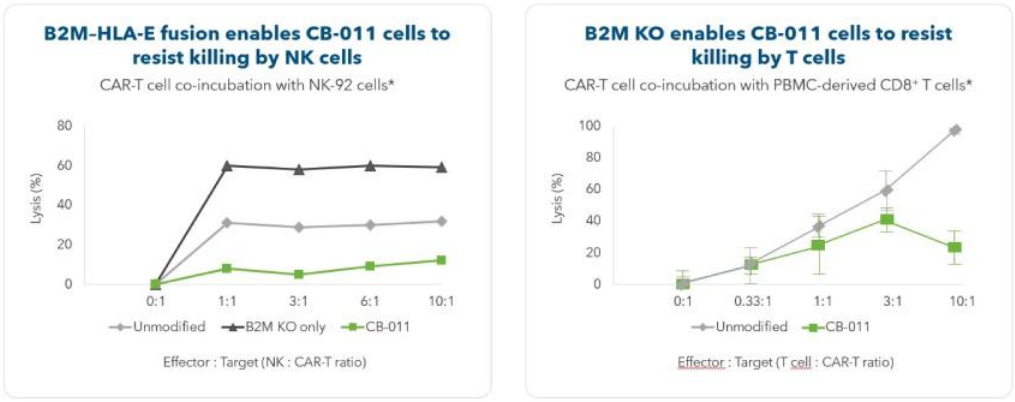


Figure 16. *Our CaMMouflage phase 1 clinical trial is designed to evaluate CB-011 in r/r MM patients. The study consists of two parts: Part A is a dose escalation with a 3 + 3 design, with sequential, increasing single doses. Part B is an expansion portion where CB-011 will be evaluated at the dose levels determined in Part A. The study also permits backfill patients at dose levels that were previously deemed safe.*

Preclinical Data

To demonstrate that the B2M–HLA-E fusion protein protects CB-011 from NK-mediated cell killing, we established an *in vitro* study where NK cells were incubated with three different kinds of CAR-T cells: CAR-T cells unmodified for HLA class I presentation, CAR-T cells lacking B2M, and CB-011 CAR-T cells lacking B2M and expressing the B2M–HLA-E fusion protein. The results of this analysis are shown in the left panel of figure 17 below. The unmodified CAR-T cells were subject to killing, or lysis, by the NK cells. The knockout of *B2M* led to enhanced killing by the NK cells, demonstrating the "missing self" hypothesis. Insertion of the B2M–HLA-E fusion transgene in the CB-011 cells protected them from NK cells more than the unmodified cells, indicating they could resist killing by NK cells, thereby suggesting the potential for longer circulation in patients. We additionally established an *in vitro* study where CB-011 CAR-T cells and unmodified CAR-T cells where co-incubated *in vitro* with peripheral blood mononuclear cell ("PBMC")-derived $CD8^+$ T cells as described in the right panel in figure 17 below. The CB-011 CAR-T cells were more resistant to PBMC-derived $CD8^+$ T cell-mediated lysis than unmodified CAR-T cells.



**in vitro* cytotoxicity measured 24 hours after co-incubation.

Figure 17. *Our CB-011 in vitro data demonstrate that expression of the B2M–HLA-E fusion protein reduces NK cell-mediated lysis (left) and B2M knockout reduces T cell-mediated lysis (right).*

We acquired a novel humanized scFv directed to BCMA that we use for the generation of the CB-011 CAR. This scFv was selected based on long-term survival demonstrated in the literature and in our preclinical studies. We constructed CARs using this and other anti-BCMA scFvs, and we evaluated the antitumor potential of CAR-T cells expressing these different CARs in mice bearing BCMA-positive tumors. In the left panel of figure 18 below, we show an example of mouse xenograft data comparing CB-011 cells with CAR-T cells expressing an alternative BCMA CAR previously described in the literature and evaluated in multiple clinical trials. CB-011 cells led to statistically significantly longer survival of the tumor-bearing mice compared to an alternative anti-BCMA CAR-T cell or vehicle. In the right panel of figure 18 below, we also show an example of a mouse orthotopic MM tumor xenograft study demonstrating that a single dose of CB-011 led to statistically significant longer survival of tumor-bearing mice compared to a negative control (vehicle).



Figure 18. *CB-011 led to statistically significant longer survival of tumor-bearing mice relative to alternative anti-BCMA CAR-T cells. The left panel represents established subcutaneous MM tumor xenograft after a single dose CAR-T cell treatment, and the right panel represents established orthotopic MM tumor xenograft after a single dose CAR-T cell treatment.*

CB-012

Overview: Strategy and Rationale

CB-012 is a healthy donor-derived, genome-edited, allogeneic CAR-T cell therapy targeting CLL-1, a receptor expressed on AML tumor cells. We are evaluating CB-012 in the ongoing first-in-human, open label, multicenter AMpLify phase 1 clinical trial (NCT06128044) in the United States. We believe CLL-1 is a compelling target for the treatment of AML as it is expressed on >90% of AML tumors and leukemic stem cells, but not expressed on HSCs. The absence of expression on HSCs indicates that these bone marrow cells will not be targeted by the CLL-1-directed CB-012 CAR-T cells, thereby preventing a patient from loss of a critical compartment of their immune system vital to generating immune cells required for fighting infections and cancer. As such, patients receiving CB-012 treatment should not require an HSC transplant to provide them with myeloid compartment cells for sustained immunity.

We have exclusively in-licensed from Memorial Sloan Kettering Cancer Center ("MSKCC") in the field of allogeneic CLL-1-targeted cell therapy a panel of fully human scFvs targeting CLL-1, from which we have selected an appropriate scFv for the generation of our CAR. As described above for CB-010 and CB-011, an important aspect of CB-012 is appropriately armoring the CAR-T cells using our Cas12a chRDNA technology to improve the persistence of antitumor activity.

We make multiple edits to CB-012 using our Cas12a chRDNA technology to enhance its antitumor activity. We edit CB-012 with two armoring strategies, checkpoint disruption (used in CB-010) and immune cloaking (used in CB-011), by implementing five genome edits using our Cas12a chRDNA technology. To our knowledge, CB-012 is the first allogeneic CAR-T cell therapy with both checkpoint disruption, through a PD-1 knockout, and immune cloaking, through a

B2M knockout and B2M–HLA-E fusion protein insertion; both armoring strategies are designed to improve antitumor activity.

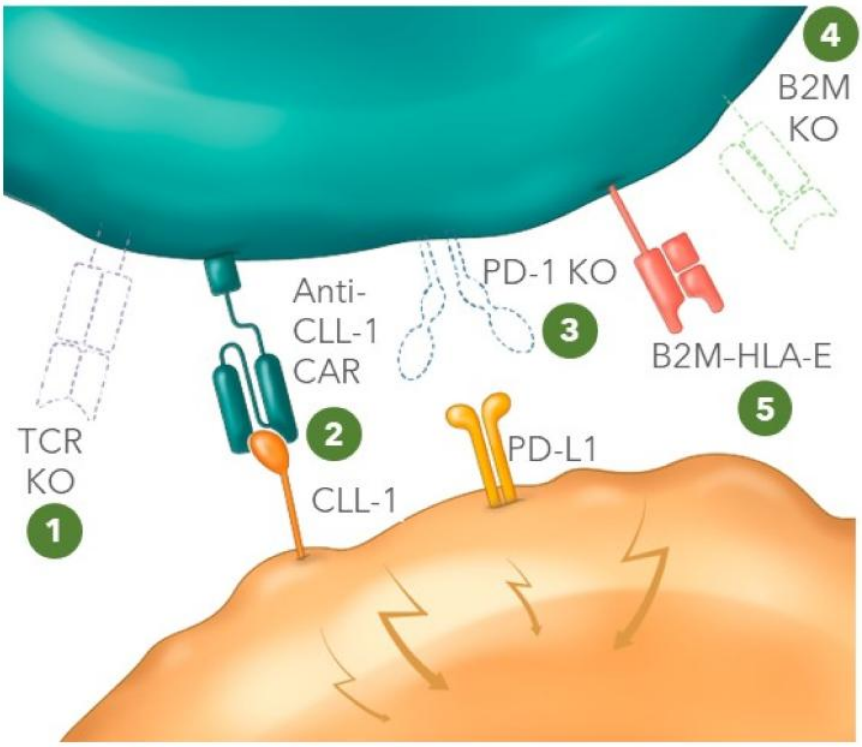


Figure 19. *CB-012 has both checkpoint disruption and immune cloaking armoring strategies, designed to potentially improve antitumor activity.*

1. *TRAC knockout:* We knock out the *TRAC* gene to eliminate expression of the TCR from the surface of the CAR-T cells. The removal of TCR expression is intended to prevent GvHD in patients.

2. *Human anti-CLL-1 CAR site-specifically inserted into the TRAC gene:* We insert the CLL-1-targeted CAR into the *TRAC* gene by AAV6 transduction and homology-directed repair. The insertion of the CAR yields a cell product that exhibits CLL-1-specific cytotoxicity and eliminates random integration of the CAR transgene achieved via other engineering approaches.

3. *PD-1 knockout:* We knock out the *PDCD*1 gene, which encodes for PD-1, a checkpoint receptor, for enhanced antitumor activity, potentially leading to a better therapeutic index.

4. *B2M gene knockout:* We knock out the *B2M* gene to reduce HLA class I presentation and T cell-medicated rejection.

5. *B2M–HLA-E-peptide fusion transgene site-specifically inserted into the B2M gene:* We site-specifically insert a transgene that fuses B2M, HLA-E, and a peptide by AAV6 transduction and homology-directed repair. HLA-E is a minor class I antigen that interacts with NK cells. This insertion, combined with the B2M knockout, yields a cell product that has only HLA-E, and no other class I antigens, on its surface. The presence of only HLA-E is designed to blunt NK cell-mediated rejection.

Target Indication

Acute myeloid leukemia is a cancer of the bone marrow currently treated with chemotherapy, radiation, targeted therapies, and/or HSC transplant. There were an estimated 20,380 new cases of AML in the United States in 2023. Five-year survival in these patients is <30%.

Intensive induction chemotherapy, known as 7 + 3, consisting of cytarabine and an anthracycline is the most effective therapy for adults newly diagnosed with AML, although the treatment has significant associated toxicities. Thus, there remains significant unmet need in the treatment of patients with AML.

AMpLify Phase 1 Clinical Trial for CB-012 in r/r AML

We have dosed the first patient in our AMpLify phase 1 clinical trial, which is evaluating CB-012 in adult patients with r/r AML. Our AMpLify clinical trial includes patients who have not responded to or relapsed after standard treatment and excludes patients who have been treated with more than three prior lines of therapy and patients with proliferative disease. Patients with prior allogeneic or autologous cell therapies are allowed to participate in our AMpLify clinical trial.

Patients in our AMpLify phase 1 clinical trial receive a chemotherapy regimen prior to CAR-T cell infusion. The chemotherapy regimen includes two agents, cyclophosphamide (750 mg/m^2/day) and fludarabine (30 mg/m^2/day) for three days. Patients then have two days of rest, following by a single CB-012 dose on Day 0. The objectives of the trial include the assessment of safety, including the incidence of AEs defined as DLTs, after CB-012 infusion, as well as the overall objective response rate and the identification of the MTD and/or recommended dose(s) for expansion ("RDE") and RP2D, as shown in figure 20 below. We are currently enrolling patients at dose level 1 (25x10^6 viable CAR-T cells) in our AMpLify clinical trial.

Our AMpLify phase 1 clinical trial is an open-label study being conducted in two parts across multiple centers in the United States. Part A is the dose escalation portion following a standard 3 + 3 design, with sequential, increasing single doses of CB-012. Part B is the expansion portion where patients will receive CB-012 at the dose levels determined in Part A to determine the RP2D.



Stem cell transplant ("SCT")

Figure 20. *Our AMpLify phase 1 clinical trial is designed to evaluate CB-012 in r/r AML patients. The study consists of two parts: Part A is the dose escalation portion with a 3 + 3 design, with sequential, increasing single doses. Part B is the expansion portion where CB-012 will be evaluated at the dose levels determined in Part A.*

Preclinical Data

We evaluated CB-012 in preclinical animal models, which demonstrated CB-012 significantly reduced tumor burden and increased overall survival. As shown in figure 21 below, in an AML xenograft model, a single dose of CB-012

significantly reduced an orthotopically-established tumor burden over a long duration compared to vehicle, or negative control, treatment.

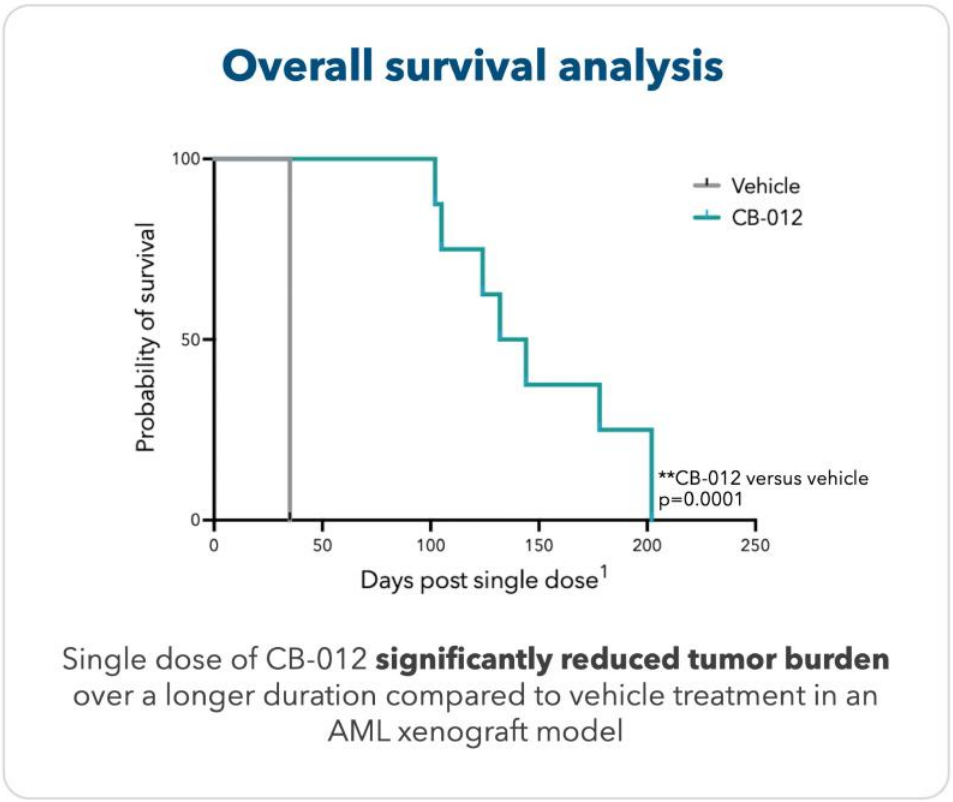


Figure 21. *We conducted orthotopic engraftment of an HL-60 CLL-1 expressing AML model in NOD SCID gamma ("NSG") mice. Results showed that a single dose of CB-012 significantly reduced tumor burden over a long duration compared to vehicle treatment in this AML xenograft model.*

In a second model, we evaluated CLL-1-specific CB-012 CAR-T cells compared to equivalent CAR-T cells that lacked the PD-1 KO in a xenograft model of CLL-1+ PD-L1+ tumor cells to evaluate the impact of the PD-1 knockout in CB-012. As shown in figure 22 below, the CLL-1-specific CB-012 CAR-T cells statistically significantly increased overall survival in the tumor-bearing mice compared to mice that received either control CAR-T cells expressing PD-1 or the vehicle control. The genome edits we use to armor CB-012 may enhance persistence and yield greater antitumor activity.

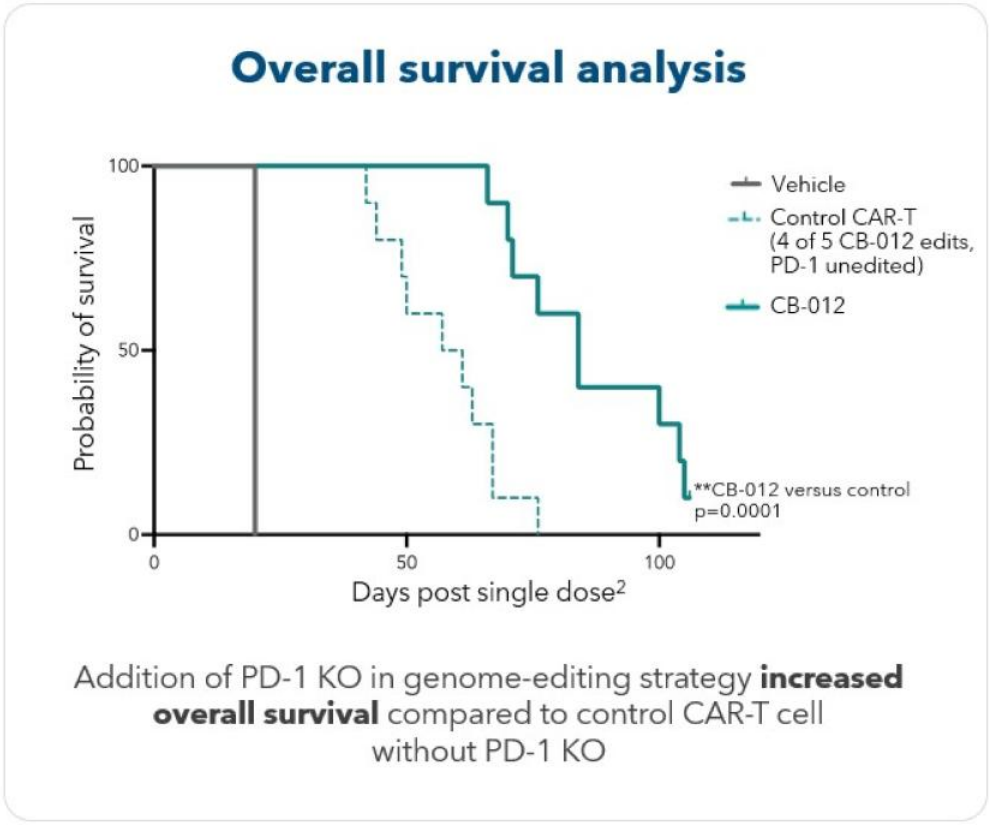


Figure 22. *We conducted orthotopic engraftment of a U937 CLL-1-expressing and PD-L1-expressing cell line in NSG mice. Results demonstrated that the PD-1 knockout strategy in CB-012 increased overall survival compared to control CAR-T cells without the PD-1 knockout.*

Our Early-Stage Research

CAR-NK Cell Therapies

We are conducting research on CAR-NK cells derived from edited iPSCs. We have developed robust differentiation and expansion protocols to derive iNKs from iPSCs. These protocols enable us to perform multiple, sophisticated genome edits to iPSCs and differentiate them into iNKs. There are multiple advantages of using iPSCs. They are amenable to higher numbers of genome-editing events than most primary cells. A solitary clone isolated after genome editing will have all the intended edits. This is distinct from the allogeneic CAR-T cell products derived from healthy donor leukapheresis, where a proportion, but not all, of the T cells in a batch contain all the intended edits. This fully edited iPSC clonal line will then be differentiated into iNK cells and expanded for therapeutic use. This platform may enable us to generate sophisticated, armored iNK cell therapies.

An outline of the multi-step iPSC to CAR-NK platform we developed is shown in figure 23 below.

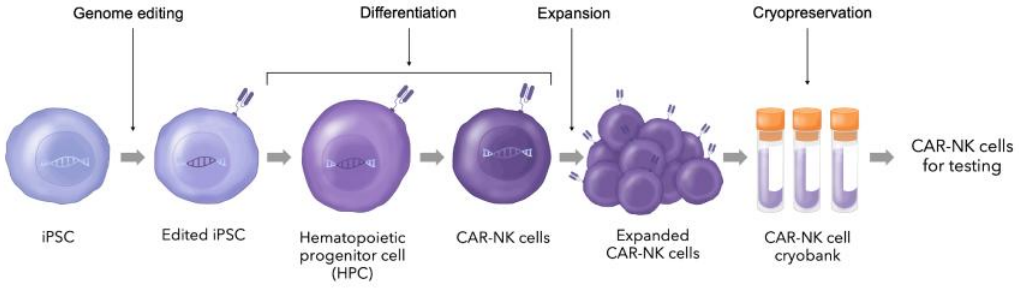


Figure 23. *We have developed protocols to edit iPSCs and then differentiate them into CAR-NK cells.*

We are developing multiple armoring strategies for our CAR-NK cell platform. In figure 24 below, we show that these strategies can lead to enhanced target cell killing activity and persistence, as well as immune cloaking of the cells, in *in vitro* and/or *in vivo* experiments, as presented at the 2022 American Association for Cancer Research and Japanese Cancer Association (AACR-JCA) Conference. We demonstrated that iNK cells with a CBLB knockout exhibit significant enhancement in target cell killing activity compared to wild-type ("WT") iNK cells in a solid tumor model, as shown in figure 24 below, left panel. We demonstrated that membrane-bound IL-15/IL-15RA fusion (mbIL-15) engineered iNK cells demonstrate enhanced cytotoxicity against a solid tumor cell line (middle panel). We also demonstrated that knockout of the *B2M* gene and insertion of the B2M–HLA-E fusion protein reduced both $CD8^+$ T cell-mediated killing and NK cell self-killing (fratricide), as shown in figure 24 below, right panel.

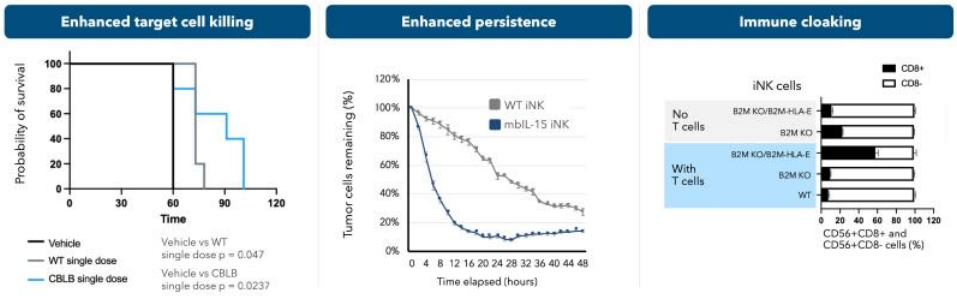


Figure 24. *We are developing multiple armoring strategies for our CAR-NK cell platform.*

As part of our regular portfolio prioritization process, we have paused the development of CB-020, a ROR-1-targeted CAR-NK cell therapy product candidate for the treatment of solid tumors. We are continuing to develop our CAR-NK cell platform and believe CAR-NK cells have potential for the treatment of multiple diseases.

Strategic Agreements

We recognize the broad opportunity presented by our genome-editing technologies to benefit patients, and we appreciate that we do not have sufficient resources to fully exploit this potential across multiple indications and applications. As part of our strategy to maximize the value and benefit of our technologies, we are exploring mutually beneficial strategic collaborations with other biotechnology or pharmaceutical companies. Additionally, we have in-licensed or taken assignment of key technologies important for the development of our product candidates.

Pfizer Investment

On June 29, 2023, we entered into a Securities Purchase Agreement ("Securities Purchase Agreement") with Pfizer Inc. ("Pfizer"), pursuant to which we, in a private placement transaction, sold to Pfizer 4,690,431 shares of our common stock, par value $0.0001 per share, at a purchase price of $5.33 per share, for aggregate gross proceeds of approximately $25.0 million ("Pfizer Investment"). The issuance and sale of the shares to Pfizer closed on June 30, 2023.

We granted certain registration rights to Pfizer under the Securities Purchase Agreement covering the resale of the shares. Unless otherwise agreed by Pfizer, we have agreed to use the proceeds from the Pfizer Investment solely in connection with (i) the development program for our allogeneic anti-BCMA CAR-T cell therapy known as CB-011 that is being evaluated in our CaMMouflage clinical trial and/or (ii) any other single-targeted anti-BCMA CAR-T cell therapy using an anti-BCMA single-chain variable fragment owned or controlled by us (collectively, cell therapies described in clauses (i) and (ii) are referred to as a "BCMA Product Candidate"), for 36 months beginning on June 29, 2023.

On June 29, 2023, in connection with the Pfizer Investment, we and Pfizer also entered into an Information Rights Agreement, having a thirty-six (36)-month term. Under the Information Rights Agreement, we granted Pfizer a 30-calendar day right of first negotiation ("ROFN") if we commence or engage with any third party with respect to a potential grant of rights to develop and/or commercialize a BCMA Product Candidate, including, without limitation, a license agreement, a co-promotion/co-commercialization agreement, a profit share agreement, a joint venture agreement, or an asset sale agreement (a "Grant of Program Rights"). If we and Pfizer do not reach an agreement with respect to a Grant of Program Rights within the 30-day period, then we may pursue negotiations and enter into an agreement with any third party. If we and such third party do not reach agreement on the Grant of Program Rights within a specified time period, Pfizer's right of first negotiation will be reinstated. Under the Information Rights Agreement, we also agreed to grant Pfizer the right to designate one representative to serve on our SAB. Through an information sharing committee, we provide calendar quarter updates to Pfizer regarding the development program for a BCMA Product Candidate. Additionally, we agreed to provide Pfizer access to any preclinical or interim or final clinical data (including raw data) and results generated as part of the development program for a BCMA Product Candidate at the same time that we provide such data to a third party (other than to our service providers or the FDA or other regulatory authorities), subject to certain confidentiality exceptions.

On June 29, 2023, we and Pfizer also entered into a Voting Agreement, pursuant to which, for a period of 12 months, Pfizer agreed to cause our voting securities that Pfizer beneficially owns (within the meaning of Rules 13d-3 or 13d-5 under the Securities Exchange Act of 1934, as amended ("Exchange Act")) in excess of 4.99% of our then issued and outstanding voting securities to be voted (i) with respect to any matter directly relating to remuneration of directors, directors' insurance, or indemnification or release from liability of directors, in a manner proportionally consistent with the votes properly cast for and against by holders of voting securities not beneficially owned by Pfizer, and (ii) with respect to any other matter in which Pfizer shall have the right to vote such voting securities, in accordance with the recommendation of our board of directors or any applicable committee thereof.

Memorial Sloan Kettering Cancer Center

On November 13, 2020, we entered into an Exclusive License Agreement with MSKCC ("MSKCC Agreement"), under which we exclusively licensed from MSKCC know-how, biological materials, and related patent families to fully human scFvs targeting CLL-1 (also known as CD371) for use in T cells, NK cells, and genome-edited iPSCs for allogeneic CLL-1-targeted cell therapy. We use one of the licensed scFvs in our CB-012 product candidate. We paid an upfront payment of cash and shares of our common stock and will owe annual license maintenance fees until we have commercial sales. For each licensed CLL-1 product, we will owe potential clinical, regulatory, and commercial milestone payments totaling up to $112.0 million and, if we, or our affiliates or sublicensees, receive regulatory approval for a licensed CLL-1 product, we will owe low- to mid-single-digit percent royalties on net sales by us, our affiliates, and our sublicensees. Our license includes the right to sublicense through multiple tiers and we will owe MSKCC a percentage of upfront cash or equity received from our sublicensees. The sublicensing percentage owed decreases as our licensed CLL-1 product candidates move through development, starting at a low-double-digit percentage if clinical trials have not yet begun and decreasing to a mid-single-digit percentage if the licensed CLL-1 product candidate is in later clinical trial stages. We are also responsible for a percentage of the licensed patent costs. The MSKCC Agreement includes certain diligence milestones that we must meet; provided, however, that these may be extended upon payment of additional fees.

MSKCC is entitled to certain success payments if our stock value increases by certain multiples. The potential payments are based on multiples of the fair market value of our common stock compared with a split-adjusted initial share price of $5.1914 per share, as subject to future adjustments for stock splits, during a specified time period described below. Our common stock price will be determined by reference to the 45-day volume weighted-average trading price of our common stock. At our option, payments may be made in cash or common stock. The relevant time period commences when the first patient is dosed with our first CLL-1 product candidate (CB-012) in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of our biologics license application ("BLA") by the FDA or 10 years from the date the first patient was dosed with our first CLL-1 product candidate in the first phase 1 clinical trial. Under the terms of the MSKCC Agreement, the aggregate success payments will not exceed $35.0 million. Additionally, if we undergo a change of control during the relevant time period, a change of control payment may be owed, depending upon the increase in our stock price due to the change of control and also to what extent success payments have already been paid. In no event will the combination of success payments and any change of control payment exceed $35.0 million.

We may terminate the MSKCC Agreement upon 90 calendar days' prior written notice to MSKCC. MSKCC may terminate the agreement in the event of our uncured material breach, bankruptcy, or criminal activity. If MSKCC materially breaches the MSKCC Agreement in certain circumstances (for example, granting a third party a license in our field), then during the time of such uncured material breach, MSKCC will not be entitled to receive any success payments or any change of control payment.

ProMab Biotechnologies, Inc. ("ProMab")

On January 31, 2020, we entered into a Sale and Assignment Agreement with ProMab (as amended, "ProMab Agreement") under which we purchased a humanized scFv targeting BCMA and a patent family related thereto for an upfront cash payment of $0.4 million and the potential payments of future royalties to ProMab. To date, five U.S. patents have granted (U.S. Patent Nos. 10,927,182; 11,021,542; 11,142,583; 11, 299,549; and 11,472,884) in this patent family. Our anti-BCMA CB-011 product candidate contains this BCMA scFv. Under the terms of the ProMab Agreement, in the event we, or our affiliates or licensees, receive regulatory approval for CB-011, we will owe ProMab low-single-digit percent royalties on net sales by us, our affiliates, and licensees until the expiration, abandonment, or invalidation of the last patent within the assigned patent family (i.e., 2040 for U.S. patents, without patent term adjustment ("PTA") or patent term extension ("PTE")). Such royalties may be reduced by no more than 50% if we must pay royalties to a third party for other intellectual property covering our product. Either party may terminate the ProMab Agreement in the event of an uncured material breach or bankruptcy of the other party. If ProMab terminates the ProMab Agreement due to our uncured material breach or bankruptcy, we must cease the manufacture, use, and sale of any products or product candidates incorporating the purchased anti-BCMA scFv.

Pioneer Hi-Bred International, Inc. ("Pioneer," now Corteva Agriscience)

On July 13, 2015, we entered into an Amended and Restated Collaboration and License Agreement (as amended, "Pioneer Agreement") with Pioneer (then a DuPont company) that superseded and replaced a prior Collaboration and License Agreement entered into on September 10, 2014. Under the terms of the Pioneer Agreement, we and Pioneer cross-licensed background CRISPR intellectual property portfolios. Pioneer granted us an exclusive worldwide license, with the right to sublicense, to its background CRISPR intellectual property in the field of research tools, and a non-exclusive license, with the right to sublicense, for CRISPR in therapeutics and all fields outside of the Pioneer field, including in the field of human and animal therapeutics. We granted Pioneer an exclusive license, with the right to sublicense, to our background CRISPR intellectual property, including the CVC IP discussed below, in certain agricultural crops, specified microorganisms, a defined industrial bio field, and certain nutrition and health applications ("Pioneer Exclusive Field"), and a non-exclusive license, with the right to sublicense, to Pioneer for CRISPR in certain defined fields outside of research reagents. The Pioneer Agreement continues until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed intellectual property; provided, however, that the parties may terminate the Pioneer Agreement by mutual consent or either party may unilaterally terminate the Pioneer Agreement if there is an uncured breach of a payment obligation, bankruptcy, or failure to maintain or own licensed intellectual property by the other party if the non-breaching party is materially adversely affected by such failure. Under the terms of the Pioneer Agreement, we are obligated to pay low-single-digit percent royalties to Pioneer for our research tool products as well as certain sublicensing revenue in that field. We are eligible to receive milestone payments from Pioneer in the event certain regulatory and commercial milestones are met, for a total of up to $22.4 million, related to specified row crops and we are also eligible to receive low-single-digit percent royalties for defined agricultural products and certain sublicensing revenue in that field.

The chRDNA patent family was developed under a three-year research collaboration between us and Pioneer, which ended December 31, 2016. Initially, this patent family was owned by Pioneer under the terms of the Pioneer Agreement, and we and Pioneer split the costs of patent prosecution and maintenance equally. Pioneer granted us an exclusive license to the chRDNA patent family in the fields of human and animal therapeutics and research tools as well as a non-exclusive license in certain other fields outside of the Pioneer Exclusive Field. Through an amendment to the Pioneer Agreement, dated December 18, 2020, Pioneer assigned the chRDNA patent family to us. Pioneer retained all of its existing rights (including its sublicensing rights) to the chRDNA patent family despite the change in ownership. As consideration for the assignment, we made an upfront payment of $0.5 million and are obligated to pay all patent prosecution and maintenance costs going forward; up to $2.8 million in regulatory milestones for therapeutic products developed by us, our affiliates, and licensees; up to $20.0 million in sales milestones over a total of four therapeutics products sold by us, our affiliates, and licensees; and a percentage of sublicensing revenues received by us for licensing the chRDNA patent family. The sublicensing agreements that we entered into prior to December 18, 2020 (for example, the Intellia Agreement discussed below) are not subject to these economics.

Intellia Therapeutics, Inc. ("Intellia")

On July 16, 2014, we entered into a License Agreement (as amended, "Intellia Agreement") with Intellia, LLC (now Intellia Therapeutics, Inc.), under which we granted Intellia an exclusive worldwide license, with the right to sublicense, to certain CRISPR-Cas9 technology for a defined field of human therapeutics in exchange for Intellia stock. The Intellia Agreement included a license to certain of our future CRISPR-Cas9 intellectual property until such time as our direct or indirect ownership percentage in Intellia dropped below 10%, called the IP cut-off date, which occurred on January 30, 2018. Intellia granted us an exclusive worldwide license, with the right to sublicense, to its CRISPR-Cas9 technology for all fields outside of the defined field of human therapeutics, including a license to certain of Intellia's future CRISPR-Cas9 intellectual property until the IP cut-off date. Each party had the right to opt in to any licenses in its field of use entered into by the other party prior to the IP cut-off date, subject to the terms and conditions of such license, and Intellia opted into our Pioneer Agreement and thus has a license to the Pioneer background CRISPR-Cas9 intellectual property. Under the Intellia Agreement, each party is responsible for 30% of the other party's expenses for prosecution and maintenance of the licensed intellectual property, including 30% reimbursement of the patent prosecution and maintenance costs that we pay to UC/Vienna as described below. The milestones and royalties set forth in the Intellia Agreement are those in the UC/Vienna Agreement and so we pass through any payments received from Intellia to UC/Vienna. The Intellia Agreement continues for the life of the licensed patents and patent applications; provided, however that either party may terminate upon the occurrence of certain events.

In 2018, Intellia initiated an arbitration proceeding over whether two patent families relating, respectively, to CRISPR-Cas9 chRDNA guides and Cas9 scaffolds, were included in the Intellia Agreement. An interim award from the arbitration panel in 2019 determined that both patent families are included in the Intellia Agreement, but the panel granted us an exclusive leaseback to Cas9 chRDNA guides under economic terms to be negotiated by the parties. On June 16, 2021, we entered into a leaseback agreement with Intellia ("Leaseback Agreement"), which resolved the arbitration proceeding. Pursuant to the Leaseback Agreement, in exchange for Intellia's grant to us of an exclusive license to certain intellectual property relating to CRISPR-Cas9, including Cas9 chRDNAs, for use solely in the manufacture of our CB-010 product candidate, we paid Intellia an upfront cash payment of $1.0 million and will pay up to $23.0 million in potential future regulatory and sales milestones. Additionally, we will owe Intellia low- to mid- single-digit percent royalties on net sales of our CB-010 product candidate by us, our affiliates, and sublicensees until the expiration, abandonment, or invalidation of the last patent within the intellectual property relating to CRISPR-Cas9, including that relating to Cas9 chRDNAs (i.e., 2036, without PTA or PTE).

The Regents of the University of California ("UC") and the University of Vienna ("Vienna")

On April 16, 2013, we entered into an Exclusive License for Methods and Compositions for RNA-Directed Target DNA Modification and for RNA-Directed Modulation of Transcription with UC and Vienna (as amended, "UC/Vienna Agreement"), under which we received an exclusive worldwide license, with the right to sublicense, in all fields to the foundational CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier ("CVC IP"). Dr. Charpentier has not granted us any rights to the CVC IP, either directly or indirectly. The UC/Vienna Agreement continues until the last-to-expire patent or last-to-be-abandoned patent application of the CVC IP; provided, however, that UC/Vienna may terminate the UC/Vienna Agreement upon the occurrence of certain events, including our uncured material breach of a material term of the UC/Vienna Agreement, and we may terminate the UC/Vienna Agreement at our sole discretion upon written notice. Without PTA or PTE, the CVC IP will expire in 2033. The UC/Vienna Agreement includes certain diligence milestones that we must meet. For products and services sold by us that are covered by the CVC IP, we will owe low- to mid-single-digit percent royalties on net sales, subject to a minimum annual royalty. Prior to such time that we are selling products, we owe UC/Vienna an annual license maintenance fee. We may owe UC/Vienna up to $3.4 million in certain regulatory and clinical milestone payments in the field of human therapeutics and diagnostics for products developed by us, our affiliates, and sublicensees. Additionally, we pay UC/Vienna a specified percentage of sublicensing revenue we receive including cash and equity under our sublicensing agreements, subject to certain exceptions. If we include intellectual property owned or controlled by us in such sublicense, we pay UC/Vienna a low-double-digit percentage of sublicensing revenues received under the sublicense. If we do not include intellectual property owned or controlled by us in such sublicense, we pay UC/Vienna 50% of sublicensing revenues received under the sublicense. To date, we have entered into over 25 sublicensing agreements in a variety of fields such as human therapeutics, forestry, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, and microbial applications that include the CVC IP as well as other Cas9 intellectual property owned or controlled by us. We are obligated to reimburse UC for its prosecution and maintenance costs of the CVC IP. The CVC IP is currently involved in administrative proceedings at the U.S. Patent and Trademark Office ("USPTO") and at the European Patent Office ("EPO"). See Risk Factors - *"Our ability to continue to receive licensing revenue and to enter into*

new licensing arrangements related to the foundational CRISPR-Cas9 intellectual property will be substantially impaired if such intellectual property is limited by administrative patent proceedings or other patent challenges," in Item 1A of this Annual Report on Form 10-K.

On December 15, 2016, we entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement ("IMA") with UC, Vienna, Dr. Emmanuelle Charpentier, Intellia Therapeutics, CRISPR Therapeutics AG, ERS Genomics Ltd., and TRACR Hematology Ltd. relating to the CVC IP. Under the IMA, each of the owners of the CVC IP (i.e., UC, Vienna, and Dr. Charpentier) retroactively consented to all licenses and sublicenses granted by the other owners and their licensees and also gave prospective consent to any licenses and sublicenses that may be granted in the future. Additionally, the IMA provides for, among other things, (i) good faith cooperation among the parties regarding patent maintenance, defense, and prosecution of the CVC IP; (ii) cost-sharing under which CRISPR Therapeutics AG reimburses us for 50% of what we reimburse UC for patent prosecution and maintenance costs; and (iii) notice of and coordination in the event of third-party infringement of the subject patents and with respect to certain adverse claimants of the CRISPR-Cas9 intellectual property. Unless earlier terminated by the parties, the IMA will continue in effect until the later of the last expiration or abandonment date of the CVC IP.

On March 14, 2019, we entered into a Memorandum of Understanding with UC/Vienna, wherein we agreed that, for sublicensees in the fields of human therapeutics and companion diagnostics, we would pay UC/Vienna the royalties and milestones set forth in the UC/Vienna Agreement for products sold by our sublicensees, not the specified percentage of such sublicensing income received by us. We also agreed to various provisions that must be included in all future sublicensing agreements, including specific provisions for exclusive sublicenses.

AbbVie Manufacturing Management Unlimited ("AbbVie")

On February 9, 2021, we entered into a Collaboration and License Agreement with AbbVie (as amended, "AbbVie Agreement") with AbbVie. Under the AbbVie Agreement, we received a $30.0 million upfront, non-refundable and non-creditable, cash payment. On September 26, 2023, we received notice from AbbVie that AbbVie had elected to terminate the AbbVie Agreement. By mutual agreement with AbbVie, termination of the AbbVie Agreement became effective on October 25, 2023.

Intellectual Property

We strive to protect and enhance the genome editing technologies that we believe are important to our business by seeking patents to cover our platform technologies. We also rely on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. Our success will depend significantly on our ability to obtain and maintain patent and trade secret protection for our technologies, our ability to defend and enforce our intellectual property rights, and our ability to operate without infringing any valid and enforceable intellectual property rights of third parties.

As of March 1, 2024, we own 59 granted U.S. patents, including nine U.S. patents covering our Cas9 and Cas12a chRDNA technologies; 309 granted foreign patents; and 90 pending patent applications throughout the world. The patent portfolio owned by us includes U.S. and foreign patents and patent applications covering methods and compositions relating generally to our Cas9 chRDNA and Cas12a chRDNA guides (which, for granted U.S. patents, without PTA or PTE, will expire in 2036). Additionally, our portfolio includes U.S. and foreign patents and patent applications covering methods and compositions relating to the anti-BCMA binding domain of our CB-011 product candidate (which, for granted U.S. patents, without PTA or PTE, will expire in 2040). In general, we file our patent applications in the United States and Europe as well as in numerous other foreign patent jurisdictions. We have exclusively in-licensed intellectual property covering the anti-CLL-1 scFv of our CB-012 product candidate from MSKCC (which, upon grant, without PTA or PTE or other extensions, will expire in 2040).

Additionally, we have extensive patent protection on CRISPR Type I systems, CRISPR-Cas9 methods and compositions, and other genome-editing technologies. The patent term in the United States and other countries is 20 years from the date of filing of the first non-provisional application to which priority is claimed. In the United States, patent term may be lengthened by a PTA, which compensates a patentee for administrative delays by the USPTO in granting a patent or may be shortened if a patent is terminally disclaimed over an earlier-filed patent. Additionally, under the Drug Price Competition and Patent Term Restoration Act of 1984 ("Hatch-Waxman Amendments"), the term of a patent that covers an FDA-approved biologic may also be eligible for a PTE of up to five years, which is designed to compensate for the patent term lost during clinical trials and the FDA regulatory review process. A PTE cannot extend the remaining term of a patent

beyond a total of 14 years from the date of product approval and only one patent claiming the drug product, methods of use or methods of manufacturing may be restored. Moreover, a patent can only be restored once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and certain other foreign jurisdictions to extend the term of a patent that covers an approved product. Without any PTE, the earliest expiration dates of our granted U.S. patents are in 2032 and the latest expiration dates of our granted U.S. patents are in 2040.

As of March 1, 2024, we own 21 trademark registrations, including 5 U.S. trademark registrations, and 8 pending trademark applications worldwide. We have registered "CARIBOU," "CARIBOU BIOSCIENCES," "SITE-SEQ," and the Caribou logo as trademarks in relevant classes and jurisdictions in the United States and certain other jurisdictions.

Furthermore, we rely upon trade secrets, know-how, continuing technological innovation and potential in-licensing opportunities to develop and maintain our competitive position. We seek to protect these trade secrets and other confidential information, in part, by entering into confidentiality agreements with parties who have access to them. We also enter into confidentiality and invention assignment agreements with our employees and our agreements with consultants include invention assignment obligations.

Competition

We currently compete across the fields of genome editing and cell therapy. We believe that our novel Cas12a chRDNA genome-editing platform has broad potential applicability across human therapeutic indications, and our strategy is to demonstrate our platform's capability by first developing improved allogeneic cell therapies in hematologic oncology indications.

The biopharmaceutical industry, and in particular the genome-editing and cell therapy fields, are characterized by intense investment and competition aimed at rapidly advancing new technologies. Our platform and therapeutic product candidates are expected to face substantial competition from multiple technologies, marketed products, and numerous other therapies being developed by other biopharmaceutical companies, academic research institutions, governmental agencies, and private research institutions. Many of our competitors have substantially greater financial, technical, and other resources, such as larger research and development staff, established manufacturing capabilities and facilities, and experienced marketing organizations with well-established sales forces. In addition, there is substantial patent infringement litigation in the biopharmaceutical industry and, in the future, we may bring or defend such litigation against our competitors.

Compared to first-generation genome-editing approaches, our chRDNA platform has shown improved specificity, a reduction in off-target edits and translocations, and an advanced capability to perform multiplexed edits, in particular multiplexed insertions. Although we believe that our scientific expertise, novel technologies, and intellectual property position offer competitive advantages, we face competition from multiple other genome-editing technologies and companies. Other companies developing CRISPR-based technologies include, among others, Arbor Biotechnologies, Beam Therapeutics Inc., CRISPR Therapeutics AG, Editas Medicine, Inc., Intellia Therapeutics, Inc., MammothBiosciences, Inc., Metagenomi Technologies,Inc., and Scribe Therapeutics, Inc. Companies developing other genome-editing technologies include, among others,Allogene Therapeutics, Inc., Cellectis S.A., Precision BioSciences, Inc., and Sangamo Therapeutics, Inc.

We believe that our CAR-T cell therapy product candidates have the potential to offer beneficial products to patients due to genome edits we make to improve their activity with the goal of extending robust CAR-T cell antitumor activity in patients. Due to the promising therapeutic effect of cell therapies, and the potential benefit of allogeneic treatment alternatives, we expect increasing competition from new and existing companies, which include, among others:

- *Autologous T cell therapy:* 2seventy bio, Inc., Adaptimmune Therapeutics plc, Arcellx, Inc., Autolus Therapeutics plc, AvenCell Therapeutics, Inc., Bristol-Myers Squibb Company, CARGO Therapeutics, Inc., Gracell Biotechnologies, an AstraZeneca PLC company, Janssen Biotech, Inc., ImmPACT Bio USA, Inc., Kite, a Gilead Company, Legend Biotech Corporation, Lyell Immunopharma, Inc., Novartis International AG, Poseida Therapeutics, Inc., Precigen, Inc., and Vor Biopharma Inc.;
- *In vivo T cell therapy*: Myeloid Therapeutics, Inc. and Umoja Biopharma;
- *Allogeneic T cell therapy:* Allogene Therapeutics, Inc. Atara Biotherapeutics, Inc., AvenCell Therapuetics, Inc., Cellectis S.A., Celyad Oncology SA, CRISPR Therapeutics AG, Fate Therapeutics, Inc., Gracell

Biotechnologies, an AstraZeneca PLC company, Imugene Limited, Kite, a Gilead Company, Legend Biotech Corporation, Poseida Therapeutics, Inc., Sana Biotechnology, Inc., and Vor Biopharma Inc.;

- *Allogeneic NK therapy:* Artiva Biotherapeutics, Inc., Celularity Inc., Century Therapeutics, Inc., Fate Therapeutics, Inc., ImmunityBio, Inc., Nkarta, Inc., NKGen Biotech, Inc., Oncternal Therapeutics, Inc., and Takeda Pharmaceutical Company Limited;
- *Other cell therapies:* Other companies are developing CAR-expressing immune cell therapies derived from macrophages, including Carisma Therapeutics Inc.; from regulatory T cells, including Kyverna Therapeutics; and from gamma-delta T cells, including Adicet Bio, Inc., Cytomed Therapeutics Limited, and Takeda Pharmaceutical Company Limited;
- *Other oncology therapeutics:* Multiple biotechnology and pharmaceutical companies developing other directly competitive technologies, such as small molecule, antibody, bi-specific antibody, and antibody-drug conjugates; and
- *Non-oncology therapeutics:* Several companies are also exploring the use of CAR-T cell therapies for the treatment of autoimmune disorders, often including against the same targets as in the oncology field (e.g., CD19, BCMA). Such autoimmune disorders include lupus nephritis, systemic lupus erythematosus, pemphigus vulgaris, myasthenia gravis, and multiple sclerosis. These companies include Fate Therapeutics, Inc., Kite, a Gilead company, Kyverna Therapeutics, Luminary Therapeutics, Nkarta, Inc., and Sana Biotechnology, Inc. in allogeneic cell therapies; and Atara Biotherapeutics, Inc., Autolus Therapeutics plc, Bristol-Myers Squibb Company, Cabaletta Bio, Inc., Cartesian Therapeutics, Inc., Century Therapeutics, Kyverna Therapeutics, Lyell Immunopharma, Inc., and Novartis AG in autologous cell therapies.

For a discussion of the risks related to competition, see Risk Factors - *"We face significant competition from other biotechnology and pharmaceutical companies, which may result in other companies developing or commercializing products before, or more successfully than, we do, thus rendering our product candidates non-competitive or reducing the size of the market for our product candidates. Our operating results will suffer if we fail to compete effectively,"* in Item 1A of this Annual Report on Form 10-K.

Manufacturing

Manufacturing of both autologous and allogeneic cell therapies requires multiple components and is complex, and there are many similarities in the processes for both kinds of therapies. The advantage of allogeneic therapies is the use of cells from healthy donors and therefore the ability to prepare, qualify, and release clinical material in advance of patient need.

For our CAR-T product candidates, we have optimized the manufacturing process that we developed in-house and have transferred the manufacturing to a CMO that manufactures cGMP-grade material for our clinical trials. Additionally, we have developed different analytical methods to understand the integrity of our cells based upon our manufacturing process. We have made a significant investment in process development to control our product candidate characteristics and to also improve our supply chain capabilities.

Figure 25 below describes the process we have developed for the manufacturing of CB-010 CAR-T cells. We use electroporation for the genome-editing step in our process. We use an instrument licensed from Maxcyte, Inc. to achieve high levels of genome editing at manufacturing scale. Our process includes an important step prior to cryopreservation that

significantly removes residual TCR-expressing cells to reduce the likelihood that CB-010 cells will induce GvHD in patients.

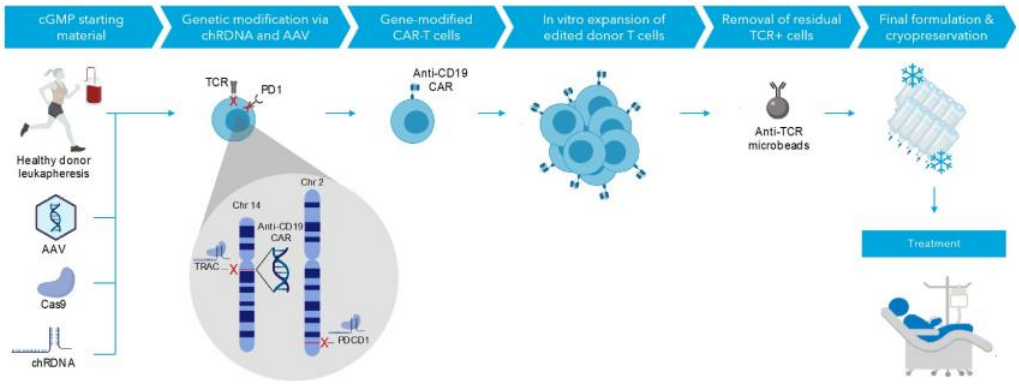


Figure 25. *Our internal process development team developed the manufacturing process for CB-010 and transferred it to a CMO.*

Figure 26 below describes the process we have developed for the manufacturing of CB-011 CAR-T cells, which also includes the residual TCR removal step.

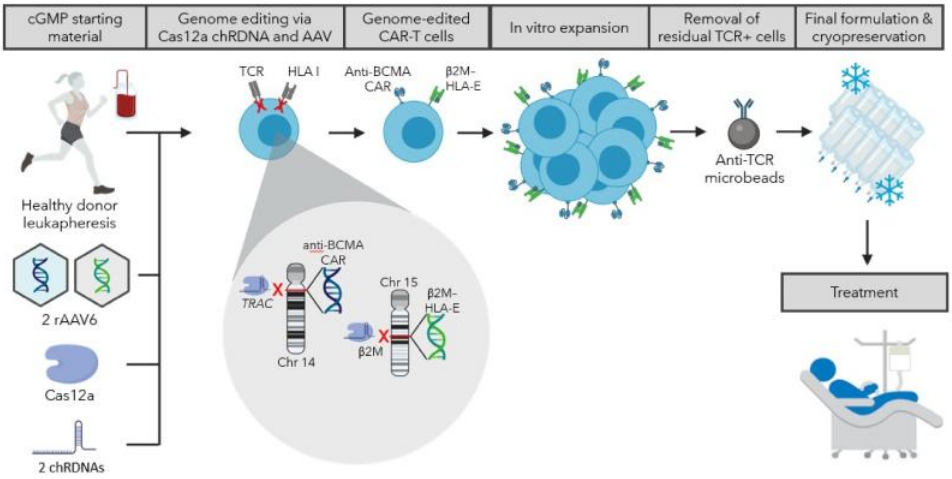


Figure 26. *Our internal process development team developed the manufacturing process for CB-011 and transferred it to a CMO.*

Figure 27 below describes the process we have developed for the manufacturing of CB-012 CAR-T cells, which also includes the residual TCR removal step.

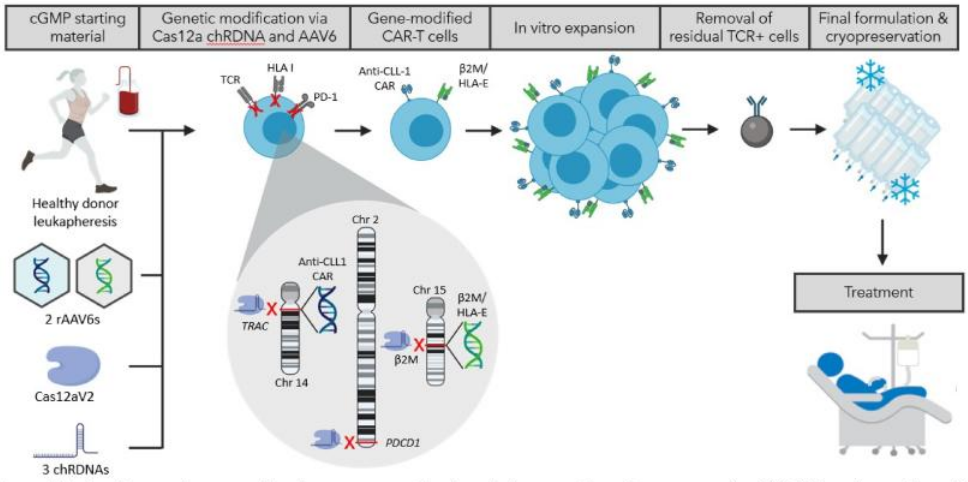


Figure 27. *Our internal process development team developed the manufacturing process for CB-012 and transferred it to a CMO.*

Our process development and manufacturing core competencies and advantages include:

- a platform process that allows optimization and learnings across all of our product candidates and preclinical research programs;
- internal process development to facilitate technical transfer to manufacturing sites;
- readily available and established equipment that further enables the transfer from process development lab to cGMP operations;

- custom engineering and development to create the necessary specific requirements for our product candidates, while leveraging the broader platform to ensure robust processes;
- removal of residual TCR positive T cells after genome editing to minimize the risk of GvHD in patients;
- process understanding and cell manufacturing control for continuous optimization of productivity and product candidate quality;
- closed manufacturing system;
- highly specific development efforts focused on enhancing cell viability;
- extensive core process knowledge of gene knockout, CAR expression, and gene insertion;
- process control and optimization, allowing for increased retention of early memory T cell phenotypes; and
- platform scale and efficiency to accommodate high dose yield per batch, with optimization for further commercial supply process.

The CMO that is manufacturing the phase 1 clinical supply of our CB-010, CB-011, and CB-012 product candidates is located in the United States and is subject to cGMP requirements. We have a dedicated cGMP suite for the manufacture of our products. We use multiple CMOs to individually manufacture the starting materials for our product candidates, including cGMP chRDNA guides, Cas9 and Cas12a proteins, and AAV6 vectors used in the manufacture of our CAR-T cells. We expect to rely on our CMOs for the manufacturing of our product candidates to expedite readiness for future clinical trials, and most of these CMOs have capabilities for commercial manufacturing. Additionally, we may decide to build our own manufacturing facility in the future, or we may deploy a hybrid approach to manufacturing to provide us with greater flexibility and control over our clinical or commercial manufacturing needs.

Government Regulation

As a biotechnology company, we are subject to extensive legal and regulatory requirements. For example, we may need approval from regulatory agencies for our research, development, testing, manufacture, quality control, packaging, storage, record keeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of our product candidates. Relevant regulatory authorities include, but are not limited to, the FDA; the European Medicines Agency ("EMA"), an agency of the European Union ("EU") in charge of the evaluation and supervision of medicinal products; the European Commission, which is the executive arm of the EU; and other national, state, local, and provincial regulatory authorities. The United States and certain jurisdictions outside the United States also regulate the pricing and reimbursement of such products. The processes for obtaining marketing approvals in the United States and in other countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources. In addition, the regulatory framework for the collection, use, safeguarding, sharing, transfer, and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future.

Licensure and Regulation of Biologics in the United States

In the United States, our product candidates are regulated as biological products, or biologics, under the Public Health Service Act ("PHSA"), and the Federal Food, Drug, and Cosmetic Act ("FDCA"), and their implementing regulations promulgated by the FDA. Failure to comply with the applicable requirements at any time during the product development process, including nonclinical testing, clinical testing, the approval process, or post-approval process, may subject us to delays in the conduct of a clinical trial, regulatory review and approval, and/or subject us to administrative or judicial sanctions. Such sanctions may include, but are not limited to, the FDA's refusal to allow us to proceed with clinical testing of our product candidates, refusal to approve pending applications, license suspension or revocation, withdrawal of an approval, receipt of untitled or warning letters, adverse publicity, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, and civil or criminal investigations and penalties brought by the FDA, U.S. Department of Justice ("DOJ"), or other governmental entities.

As we seek approval to market and distribute a new biologic in the United States, we generally must satisfactorily complete each of the following steps:

- preclinical laboratory tests and formulation studies performed in accordance with the FDA's current Good Laboratory Practice ("cGLP") regulations;
- manufacture and testing of clinical investigational product according to cGMPs;
- submission to the FDA of an investigational new drug ("IND") application for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board ("IRB"), representing each clinical trial site before each clinical trial may be initiated, or by a central IRB if appropriate;
- performance of adequate and well-controlled human clinical trials required to establish the safety and efficacy of the product candidate for each proposed indication, in accordance with the FDA's current Good Clinical Practice ("cGCP") regulations including, but not limited to, informed consent and investigator disclosure requirements;
- preparation and submission to the FDA of a BLA for marketing approval of our product candidates for one or more proposed indications, including submission of detailed information on the manufacture and composition of our product candidates and proposed labeling;
- review of the BLA by an FDA advisory committee, where applicable;
- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of any third-party manufacturers, at which the product, or components thereof, are produced in order to assess compliance with cGMP requirements and to ensure that the facilities, methods, and controls are adequate to preserve and ensure the product's identity, strength, quality, and purity, and, if applicable, the FDA's current Good Tissue Practice ("cGTP"), for the use of human cell and tissue products;
- satisfactory completion of any FDA audits of the nonclinical study and clinical trial sites to ensure compliance with cGLPs and cGCPs, respectively, and the integrity of nonclinical and clinical data in support of the BLA;
- payment of user fees and securing FDA approval of the BLA; and
- compliance with any post-approval requirements, including the potential requirement to implement Risk Evaluation and Mitigation Strategy ("REMS"), adverse event reporting, and compliance with any post-approval studies required or requested by the FDA.

Preclinical Studies and Investigational New Drug Applications

Before testing any investigational biologic product candidate in humans, our product candidates must undergo preclinical testing. Preclinical tests include laboratory evaluations of product chemistry, formulation, and stability. The FDA Modernization Act 2.0, which was enacted in December 2022, removed the historical requirements that animal testing results be submitted to the FDA for the agency's review before a human clinical trial may begin. The conduct of the preclinical tests and the formulation of the compounds for use in the preclinical testing must comply with federal regulations and/or requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application. An IND is an exemption from the restrictions of the FDCA, which would otherwise preclude an unapproved biologic product candidate from being shipped in interstate commerce. Under a cleared IND, the unapproved biologic product candidate may be shipped in interstate commerce for use in an investigational clinical trial, provided that the product candidate meets certain quality and labeling requirements. The FDA has 30 calendar days after receipt of our IND application to review and decide whether we may proceed to human clinical trials. During or after its review, the FDA may raise concerns or questions about our product candidate or conduct of the proposed clinical trial, including concerns that human research subjects could be exposed to unreasonable and significant health risks. If the FDA raises concerns or questions during this 30-day period, including safety concerns or concerns due to regulatory non-compliance, we and the FDA must resolve any outstanding concerns before the clinical trials can begin. In certain cases, the FDA may impose a partial or complete clinical hold with respect to our product. Such a clinical hold would delay either a proposed clinical trial, or cause suspension of an ongoing clinical trial, until all outstanding concerns

have been adequately addressed, and the FDA has notified us that our clinical trials may proceed or recommence. In certain cases, we may not be able to proceed at all with our proposed clinical trial.

Human Clinical Trials in Support of a BLA

Our clinical trials involve the administration of our product candidate to patients with the disease to be treated and are conducted under the supervision of a qualified principal investigator in accordance with cGCP requirements. Clinical trials are conducted under study protocols detailing, among other things, the objectives of the clinical trial, inclusion, and exclusion criteria, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and subsequent protocol amendments must be submitted to the FDA as part of the IND and must also be reviewed by an IRB.

If we wish to conduct a clinical trial outside of the United States, we may, but need not, obtain FDA authorization to conduct the clinical trial under an IND application. When a foreign clinical trial is conducted under a foreign equivalent to an IND application, FDA IND applications requirements must be met unless waived. If a non-U.S. clinical trial is not conducted under an FDA IND application, we may submit data from a well-designed and well-conducted clinical trial to the FDA in support of our BLA as long as the clinical trial is conducted in compliance with cGCP and the FDA is able to accept the data from the clinical trial and/or through an onsite inspection if the FDA deems it necessary. In certain cases, however, the FDA may refuse to approve drugs based only on clinical trials conducted outside of the United States. For example, an FDA panel previously recommended against approving an immunotherapy drug that was tested only in China, citing potential concerns about the diversity of the clinical trial population, among others. A senior FDA official has also voiced concerns previously about approving drugs that are developed and tested only in overseas markets. It is not clear how or whether FDA's policies may change in the future.

For clinical trials conducted in the United States, each clinical trial must be reviewed and approved by an IRB, either centrally or individually at each institution at which our clinical trials will be conducted. The IRB will consider, among other things, our clinical trial design, subject informed consent, ethical factors, and the safety of human subjects. The IRB must operate in compliance with FDA regulations governing IRBs. The FDA, the applicable IRB, or we may suspend or terminate a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements or that the subjects or patients are being exposed to an unacceptable health risk. Some clinical trials receive additional oversight by an independent group of qualified experts organized by us, known as a data safety monitoring board or committee. This group receives and reviews data from the clinical trial on an ongoing basis and may recommend continuation of the clinical trial as planned, changes in clinical trial conduct, or cessation of the clinical trial at designated check points based on such data.

In addition to the submission of an IND to the FDA before initiation of a clinical trial in the United States, certain human clinical trials involving recombinant or synthetic nucleic acid molecules may be subject to oversight of institutional biosafety committees ("IBCs"), as set forth in the National Institutes of Health ("NIH") Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules ("NIH Guidelines"). Under the NIH Guidelines, recombinant and synthetic nucleic acids are defined as: (i) molecules that are constructed by joining nucleic acid molecules and that can replicate in a living cell (i.e., recombinant nucleic acids); (ii) nucleic acid molecules that are chemically or by other means synthesized or amplified, including those that are chemically or otherwise modified but can base pair with naturally occurring nucleic acid molecules (i.e., synthetic nucleic acids); or (iii) molecules that result from the replication of those described in (i) or (ii). Specifically, under the NIH Guidelines, supervision of human gene transfer trials includes evaluation and assessment by an IBC, a local institutional committee that reviews and oversees research utilizing recombinant or synthetic nucleic acid molecules at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment, and such review may result in some delay before initiation of a clinical trial. Although the NIH Guidelines are not mandatory unless the research in question is being conducted at or sponsored by institutions receiving NIH funding of recombinant or synthetic nucleic acid molecule research, many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them.

Furthermore, the Food and Drug Omnibus Reform Act of 2022 requires clinical trial sponsors to submit a diversity action plan for clinical trials, unless a waiver is granted by the FDA for reasons such as prevalence of the disease or condition, impracticality of implementing such a diversity action plan, or if such implementation would be against the interest of public health during a public health emergency. Unless the FDA has granted a waiver, sponsors must submit such action plans by the time the sponsors submit study protocols for its phase 3 clinical trial or other pivotal clinical trial. The action plan must include information such as the sponsor's goal for enrollment (by sex, ethnic characteristics, age), the rationale behind the enrollment goals, the subject patient population, potential barriers for enrollment, among others. This

requirement will become applicable to all clinical trials that begin enrollment 180 days after FDA publishes its final guidance on this topic.

Clinical trials typically are conducted in three sequential phases; however, the phases may overlap or may be combined.

- Phase 1 clinical trials are initially conducted in a limited population of healthy humans or, for our product candidates, in patients, such as cancer patients, in order to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics, and to identify a recommended phase 2 dose.
- Phase 2 clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications, and to determine dose tolerance and optimal dosage. We may conduct multiple phase 2 clinical trials to obtain information prior to beginning larger and costlier phase 3 clinical trials. The phase 2 clinical trial for our product candidates may serve as the pivotal phase 3 trial, in which case a separate phase 3 clinical trial will not be necessary.
- Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage and gather the additional information about effectiveness and safety that is needed to evaluate the overall benefit-risk relationship of the drug and to provide an adequate basis for physician labeling.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the status of clinical trials must be submitted to the FDA. Written IND safety reports must be submitted to the FDA and the investigators within 15 calendar days of receipt by us after determining that the information qualifies for such expedited reporting. IND safety reports are required for suspected unexpected serious adverse reactions ("SUSARs"), findings from other studies or animal or *in vitro* testing that suggest a significant risk to humans in our clinical trials, and any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Additionally, we must notify FDA within seven calendar days after receiving information concerning any unexpected fatal or life-threatening suspected adverse reaction. Other external events may occur that can affect the conduct of our clinical trials, such as pandemics or government shutdowns.

In some cases, the FDA may approve a BLA for our product candidate but require us to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as phase 4 clinical trials or post-approval commitments. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. Failure to exhibit due diligence in conducting phase 4 clinical trials or post-approval commitments could result in withdrawal of approval for our products.

Guidance Governing Gene Therapy Products

The FDA has defined a gene therapy product as one that mediates its effects by transcription and/or translation of transferred genetic material or by specifically altering host (human) genetic sequences. Examples of gene therapy products include nucleic acids (e.g., plasmids, *in vitro* transcribed ribonucleic acid), genetically modified microorganisms (e.g., viruses, bacteria, fungi), engineered site-specific nucleases used for human genome editing, and *ex vivo* genetically modified human cells. The products may be used to modify cells *in vivo* or transferred to cells *ex vivo* prior to administration to the recipient. Within the FDA, the Center for Biologics Evaluation and Research ("CBER") regulates gene therapy products. Within CBER, the review of gene therapy and related products is consolidated in the Office of Tissues and Advanced Therapies, and the FDA has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its reviews. The FDA and the NIH have published guidance documents with respect to the development and submission of gene therapy protocols.

For example, in January 2024, the FDA issued a guidance document titled "Considerations for the Development of Chimeric Antigen Receptor T Cell Products; Guidance for Industry," which provides recommendations regarding collection and handling of cellular starting materials, vector manufacturing and testing processes, CAR-T cell design and development considerations, pharmacology and toxicology, clinical trial considerations, manufacturing processes, analytical comparability, etc. In this guidance the FDA outlined factors that sponsors should consider in conducting clinical trials using CAR-Ts, including defining appropriate study populations based on potential toxicities of CAR-T cells, such as

cytokine-release syndrome and neurological toxicities, diagnostic tests that can identify patients with tumors that have the target antigens, selection of appropriate dosage levels based on viable transduced CAR-T cells, etc. The FDA also issued a guidance document titled "Human Gene Therapy Products Incorporating Human Genome Editing" in January 2024, which provides recommendations for sponsors that are developing gene therapy products involving genetic editing of somatic cells, as well as information that sponsors should provide to the FDA prior to beginning a clinical trial, including information on the design of the gene editing component; delivery mechanisms for the gene editing components; information on chemistry, manufacturing, and controls ("CMC"); risk of unregulated proliferation; potential implications of off-site gene editing; etc. The FDA also has issued other guidance documents that relate to gene therapies, such as "Human Gene Therapy for Rare Diseases," and it is likely that the FDA will continue to issue additional guidelines in the future that may affect our product candidates.

Although the FDA has indicated that its guidance documents regarding gene therapies are not legally binding, we believe that our compliance with them is likely necessary to gain approval for any product candidate we may develop. The guidance documents provide additional factors that the FDA will consider at each of the above stages of development and relate to, among other things, the proper preclinical assessment of gene therapies; the CMC information that should be included in an IND application; the proper design of tests to measure product potency in support of a BLA application; and measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies when the risk of such effects is high. Further, the FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events. Depending on the product type, long term follow up can be up to 15 years or as short as five years.

Clinical Trial Registry

There also are requirements governing the reporting of ongoing clinical trials and completed clinical trial results to public registries, such as such as *www.ClinicalTrials.gov.* We are required to register and disclose certain clinical trial information, including the product information, patient population, phase of investigation, clinical trial sites and investigators, and other aspects of the clinical trial on *www.ClinicalTrials.gov*. We are also obligated to disclose the results of our clinical trials after completion. Disclosure of the results of these clinical trials can be delayed until the new product candidate or new indication being studied has been approved, up to a maximum of two years.

Compliance with cGMP and cGTP Requirements

Before approving a BLA, the FDA typically will inspect the facility or facilities where our product candidates are manufactured. The FDA will not approve a BLA unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to ensure consistent production of the product within required specifications. The PHSA emphasizes the importance of manufacturing control for products such as biologics whose attributes cannot be precisely defined. Material changes in manufacturing equipment, location, or process post-approval may result in additional regulatory review and approval.

The FDA also will not approve the product if we are not in compliance with cGTPs, which are requirements found in FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue-based products ("HCT/Ps"), which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the cGTP requirements is to ensure that cell- and tissue-based products are manufactured in a manner designed to prevent the introduction, transmission, and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing.

Review and Approval of a BLA

The results of product candidate development, preclinical testing, and clinical trials, including negative or ambiguous results as well as positive findings, are submitted to the FDA as part of a BLA requesting a license to market the product. The BLA must contain sufficient manufacturing information and detailed information on the composition of the product candidate and proposed labeling as well as payment of a user fee.

The FDA has 60 calendar days after submission of a BLA to conduct an initial review to determine whether the BLA is acceptable for filing based on the agency's threshold determination that the BLA is sufficiently complete to permit substantive review. Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under the Prescription Drug User Fee Act ("PDUFA"), the

FDA has 10 months in which to complete its initial review of a standard application and respond to us, and six months for a priority review of the application. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs. The review process may often be significantly extended by FDA requests for additional information or clarification. The review process and the PDUFA goal date may be extended by three months if the FDA requests, or if we otherwise provide through the submission of a major amendment, additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

Under the PHSA, the FDA may approve a BLA if it determines that our product candidate is safe, pure, and potent and the manufacturing facility meets standards designed to ensure that our product continues to be safe, pure, and potent.

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of nonclinical study and clinical trial sites to ensure compliance with cGMPs and cGCPs, respectively, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of our product candidate with specific prescribing information for specific indications. If our BLA is not approved, the FDA will issue a complete response letter, which will contain the conditions that must be met in order to secure final approval of the application and, when possible, will outline recommended actions we might take to obtain approval of our BLA. If we receive a complete response letter, we may submit to the FDA information that represents a complete response to the issues identified by the FDA. Such resubmissions are classified under the PDUFA as either class 1 or class 2. The classification of a resubmission is based on the information submitted by us in response to the complete response letter. Under the goals and policies agreed to by the FDA under the PDUFA, the FDA has two months to review a class 1 resubmission and six months to review a class 2 resubmission. The FDA will not approve an application until issues identified in the complete response letter have been addressed. Alternatively, if we receive a complete response letter, we may either withdraw our BLA or request a hearing.

The FDA may also refer our BLA to an advisory committee for review, evaluation, and recommendation as to whether our BLA should be approved. In particular, the FDA may refer to an advisory committee application for biologic products that present difficult questions of safety or efficacy. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates, and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

If the FDA approves any one of our products, it may limit the approved indications for use of our products. The FDA may also require that contraindications, warnings, or precautions be included in the product labeling. In addition, the FDA may call for post-approval studies, including phase 4 clinical trials, to further assess a product's safety after approval. The FDA may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use ("ETASU"). ETASU can include, but is not limited to, specific or special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, certain manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Fast Track, Breakthrough Therapy, Priority Review, and Regenerative Medicine Advanced Therapy Designations

The FDA is authorized to designate certain products for expedited review if such products are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs include fast track designation, breakthrough therapy designation, priority review, and regenerative medicine advanced therapy designation. These designations are not mutually exclusive, and our product candidates may qualify for one or more of these programs. Although these programs are intended to expedite product development and approval, they do not alter the standards for FDA approval.

The FDA may designate one or more of our product candidates for fast track review if our product candidate is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it can be demonstrated that our product candidate has the potential to address unmet medical needs for such a disease or condition. Our CB-010 and CB-011 product candidates have been designated for fast track review, and, for fast track product candidates, we may have greater interactions with the FDA, and the FDA may

initiate review of sections of our fast track product candidate's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by us, that a fast track product candidate may be effective. We must also provide, and the FDA must approve, a schedule for the submission of the remaining information, and we must pay applicable application user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the application is submitted. In addition, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process, or if our designated product candidate development program is no longer being pursued.

Our product candidates may obtain breakthrough therapy designations if they are intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that our product candidates may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to product candidates with such designations, including holding meetings with us throughout the development process, providing timely advice to us regarding development and approval, involving more senior staff in the review process, assigning a cross-disciplinary project lead for the review team, and taking other steps to design the clinical trials in an efficient manner. Breakthrough designation may be rescinded if our product candidate no longer meets the qualifying criteria.

The FDA may designate one of more of our product candidates for priority review if our product candidate treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness of the treatment, prevention, or diagnosis of such condition. The FDA makes such determination on a case-by-case basis, compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting adverse reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for acting on a marketing application from 10 months to six months.

The FDA may grant product candidates RMAT designations if such product candidates are regenerative medicine therapies intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that they have the potential to address unmet medical needs for such disease or condition. RMAT designation provides potential benefits that include early interactions and more frequent meetings with the FDA to discuss the development plan for the product candidate and eligibility for rolling review and priority review. Product candidates granted RMAT designation may also be eligible for accelerated approval on the basis of surrogate or intermediate clinical trial endpoints reasonably likely to predict long-term clinical benefit, or reliance upon data obtained from a meaningful number of sites, including through expansion to additional sites. RMAT-designated products that receive accelerated approval may, as appropriate, fulfill their post-approval requirements through the submission of clinical evidence, clinical trials, patient registries, or other sources of real-world evidence such as electronic health records, through the collection of larger confirmatory data sets as agreed with the FDA, or via post-approval monitoring of all patients treated with such therapy prior to approval of the therapy. Regenerative medicine advanced therapy designation may be rescinded if our product candidate no longer meets the qualifying criteria.

The FDA granted CB-010 RMAT designation for r/r LBCL.

Accelerated Approval Pathway

The FDA may grant accelerated approval to our product candidates for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that our product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when our product candidate has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality ("IMM"), and that our product candidate is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition, and the availability or lack of alternative treatments. Product candidates granted accelerated approval must meet the same statutory standards for safety and efficacy as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit but is not itself a measure of

clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a product candidate, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints but has indicated that such endpoints generally could support accelerated approval where a clinical trial demonstrates a relatively short-term clinical benefit in a chronic disease setting in which assessing long-term clinical benefit is essential for traditional approval, but the short-term benefit is considered reasonably likely to predict long-term benefit.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product candidate, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on our agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe our product candidate's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, would allow the FDA to withdraw the product from the market on an expedited basis. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA unless the FDA informs us otherwise.

Post-Approval Regulation

If regulatory approval for marketing of any of our product candidates is obtained, we will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA has imposed as part of the approval process. We will be required to report certain adverse reactions and manufacturing problems to the FDA, provide updated safety and efficacy information, and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers of our products are required to register their establishments with the FDA and certain state agencies and are subject to periodic announced or ad hoc inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP regulations, which impose certain procedural and documentation requirements upon these manufacturers. Accordingly, we and our third-party manufacturers must continue to expend time, money, and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

Our products may also be subject to official lot release, meaning that the manufacturer of our products is required to perform certain tests on each lot of the product before the product is released for distribution. If the product is subject to official lot release, the manufacturer must submit to the FDA samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of the manufacturer's tests performed on the lot. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution.

Once a marketing approval is granted for our product candidate, the FDA may withdraw the approval if compliance with regulatory requirements is not maintained or if problems occur after our product reaches the market. Later discovery of previously unknown problems with our product, including adverse events of unanticipated severity or frequency, issues with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information, imposition of post-marketing studies or clinical trials to assess new safety risks, or imposition of distribution or other restrictions under a REMS program.

Other potential consequences of a failure to comply with regulatory requirements include:

- restrictions on the marketing or manufacturing of our product, complete withdrawal of our product from the market, or product recalls;
- fines, untitled or warning letters, or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of our product license approvals;

- product seizure or detention, or refusal to permit the import or export of products or the raw materials or ingredients that are needed for product manufacture; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising, and promotion of licensed and approved products that are placed on the market. Pharmaceutical products may be promoted only for the approved indications and in accordance with the provisions of the approved label.

Orphan Drug Designation

Orphan drug designation may be available for drugs that are intended for rare diseases or conditions, defined as (i) a disease or condition that affects fewer than 200,000 individuals in the United States or (ii) a disease or condition that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available a biologic for the disease or condition will be recovered from sales of the product in the United States. If a drug becomes the first drug that is approved for the same indication for which the FDA has granted the designation, the drug will be entitled to exclusivity, which means the FDA may not approve any other application to market the same drug for the same orphan indication for a period of seven years following the date of our product's marketing approval, except in certain circumstances. In June 2019, the FDA's policy, based on its regulations, see 21 C.F.R. §316.3(b), was challenged by a pharmaceutical company that argued that once an orphan drug is approved for a disease or condition, the FDA may not approve another drug for the same disease or condition, even if for different uses or indications that the FDA has not approved. On appeal, in December 2021, the U.S. Court of Appeals for the Eleventh Circuit reversed the lower court's decision and agreed with the position of the pharmaceutical company that challenged the FDA. Despite this loss, in January 2023, FDA stated its intent to continue to apply its regulations tying the applicability of the orphan drug exclusivity to the specific uses or indications, rather than diseases or conditions. It is possible that, in the future, Congress or the FDA may further update and revise the law and policies on this issue.

In addition, other financial incentives, such as tax credits, may be available. To obtain an orphan drug designation, we must make a request before submitting our BLA for a particular product candidate. After the FDA grants orphan drug designation, the generic or trade name, or the chemical name or a meaningful description of the biologic, its designated orphan use and date of designation, and our company name are disclosed publicly by the FDA. Orphan drug designation does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

The FDA has granted orphan drug designation to CB-010 for the treatment of FL and to CB-011 for the treatment of MM.

Pediatric Studies and Exclusivity

Under the Pediatric Research Equity Act of 2003 (as amended, "PREA"), a BLA or supplement to a BLA for a product candidate with certain novel characteristics must contain data to assess the safety and effectiveness of the product candidate for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product candidate is safe and effective.

Sponsors must submit a pediatric study plan to FDA outlining the proposed pediatric study or studies they plan to conduct, including study objectives and design, any deferral or waiver requests, and other information required by regulation. The FDA must then review the information submitted, consult with the sponsor, and agree upon a final plan. The FDA or the sponsor may request an amendment to the plan at any time.

For products intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of a sponsor, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, the FDA will meet early in the development process to discuss pediatric study plans with the sponsor and the FDA must meet with the sponsor by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than 90 calendar days after FDA's receipt of the study plan. The FDA may, on its own initiative or at the request of the sponsor, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements, under specified circumstances. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if pediatric data is submitted that sufficiently responds to a written request from the FDA for such data. The data do not need to show a product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to be responsive to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not PTE; instead, this grant of exclusivity extends the regulatory period during which the FDA cannot approve another application.

Biosimilars and Exclusivity

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010 ("Affordable Care Act") includes a subtitle called the Biologics Price Competition and Innovation Act of 2009 ("BPCIA"), which created an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product in the United States. Starting in 2015, the FDA commenced licensing biosimilars under the BPCIA, and there are currently numerous biosimilars approved in the United States and Europe.

For the FDA to approve a biosimilar product, it must find that there are no clinically meaningful differences between the reference product and proposed biosimilar product in terms of safety, purity, and potency. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product, and, for products administered multiple times, that the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. Even after the FDA approves a biosimilar product, the product, its manufacturing processes, post-approval clinical data, labeling, advertising, and promotional activities for the product will be subject to continuous requirements of and review by the FDA or other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, including mandatory post-marketing safety reporting; registration and listing requirements; cGMP requirements relating to quality control, quality assurance, and corresponding maintenance of records and documents; and requirements regarding recordkeeping.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date of approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was approved. Even if a product is considered to be a reference product eligible for exclusivity, another company could market a competing version of that product if the FDA approves a full BLA for such product containing our own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of the product.

Patent Term Extension

A patent claiming a new biologic product may be eligible for a limited PTE under the Hatch-Waxman Amendments, which permits a patent restoration of up to five years for patent term lost during product development and FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of an IND and the submission date of a BLA, plus the time between the submission date of a BLA and the ultimate approval date, less any time during which due diligence was not conducted. PTE cannot be used to extend the remaining term of a patent past a total of 14 years from the product's regulatory approval date. Pursuant to 35 U.S.C. §156, only one patent covering an approved product, or the use or manufacture thereof, is eligible for PTE, and the application for the extension must be submitted prior to the expiration of the patent in question and within 60 calendar days after regulatory approval. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any PTE in consultation with the FDA. Similar provisions are available in Europe and other jurisdictions to extend the term of a patent that covers an approved biologic although the eligibility requirements for these extensions vary.

Regulation and Procedures Governing Approval of Medicinal Products in Other Countries

In order to market any product outside of the United States, we must also comply with numerous and comprehensive regulatory requirements of other countries and jurisdictions, regarding quality, safety, and efficacy, and

governing, among other things, clinical trials, marketing authorization, post-authorization requirements, commercial sales, import and export, reimbursement, and distribution of products. Whether or not we obtain FDA approval for our product candidates, we will need to obtain the necessary approvals from health regulatory authorities in other countries or jurisdictions before we can initiate clinical trials or marketing of our products in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the EU generally follows the same lines as in the United States, although the approval of a medicinal product in the United States is no guarantee of approval of the same product in the EU, either at all or within the same timeframe as approval may be granted in the United States. The process entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of a product candidate for each proposed indication. It also requires the submission to the EMA or the relevant member state competent authorities, of a marketing authorization application and granting of a marketing authorization by the EMA or these authorities before the product can be marketed and sold in the EU.

U.S. Export Control Licensing Requirements and Other U.S. and Foreign Trade Regulations, Sanctions Laws, Anti-Corruption, and Anti-Money Laundering Laws

We develop product candidates that may be subject to varying U.S. export control licensing requirements and foreign investment regulations. In addition, U.S. international trade laws, including the U.S. Foreign Corrupt Practices Act of 1977, as amended ("FCPA"), and similar anti-bribery or anti-corruption laws, regulations, and rules of other countries in which we may choose to operate, could apply to our international activities. Anti-corruption laws generally prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector in order to influence action. The FCPA also requires public companies to make and keep books and records that accurately and fairly reflect the transactions of the company and to devise and maintain an adequate system of internal accounting controls.

In addition, U.S. import and export regulations, anti-money laundering laws, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls could apply to any international activities we may undertake.

Coverage, Pricing, and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may seek regulatory approval by the FDA or other government authorities. In the United States and other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services often rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use any product candidates we may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. In addition, direct or indirect governmental price regulation may affect the prices that we may charge for product candidates.

United States

Even if any product candidates we may develop obtain approval, sales of such product candidates will depend, in part, on the extent to which third-party payors, including government healthcare programs in the United States, such as Medicare and Medicaid, commercial health insurers, and managed care organizations provide coverage and establish adequate reimbursement levels for such product candidates.

In general, factors a payor considers in determining coverage and reimbursement are based on whether the product is:

- a covered benefit under its health plan;
- safe, effective, and medically necessary, including its regulatory approval status;
- medically appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

In the United States, no uniform policy of coverage and reimbursement for biological products, including gene and cell therapy products, exists among third-party payors. As a result, obtaining coverage and reimbursement approval for such a product from a government or other third-party payor is a time-consuming and costly process that could require us to provide to each payor supporting scientific, clinical, and cost-effectiveness data regarding the product's clinical benefits, medical necessity, and risks on a payor-by-payor basis, with no assurance that coverage and adequate reimbursement will be obtained. A decision by a third-party payor not to cover any product candidates we may develop could reduce physician utilization of such product candidates once approved and have a material adverse effect on our sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved, and inadequate reimbursement rates, including significant patient cost sharing obligations, may deter patients from selecting our product candidates. One payor's determination to provide coverage for a product does not ensure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payor to payor. Third-party reimbursement and coverage may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

European Union

In the EU, the approval process and requirements governing pricing and reimbursement for any product candidate vary greatly between countries and jurisdictions. Some countries allow biological products to be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional testing or studies that compare the cost effectiveness of a particular biological product to currently available treatments, or so-called health technology assessments, in order to obtain reimbursement or pricing approval. The EU HTA Regulation 2021/2282 became effective in January 2022 and aims to harmonize clinical and scientific aspects of HTA across the EU. However, it will only begin to apply from January 2025 and will have a phased implementation.

Some countries, including several EU member states, set prices and reimbursement for biological products, with limited participation from the marketing authorization holders. For example, the EU provides options for its member states to restrict the range of biological products for which their national health insurance systems provide reimbursement and to control the prices of biological products for human use. EU member states may approve a specific price for a biological product or may instead adopt a system of direct or indirect controls on the profitability of the company providing the biological product. Recently, many European countries have increased the level of discounting required in relation to the pricing of biological products and these efforts could continue as countries attempt to manage healthcare expenditures.

Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, customers, and patients are subject to broadly applicable fraud and abuse laws including anti-kickback laws, false claims laws, and health care provider payment transparency laws, as well as data privacy and security laws and other healthcare laws that may constrain our business and/or financial arrangements. Violation of these laws may result in significant civil monetary penalties, possible exclusion from participation in U.S. federal health care programs, and/or criminal penalties.

Restrictions under applicable U.S. federal and state healthcare laws and regulations, as well as equivalent international laws, include but are not limited to the following:

- the U.S. federal Anti-Kickback Statute ("AKS"), which prohibits, among other things, individuals or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce, or reward, either the referral of an individual, or the purchase, lease, order, arrangement for or recommendation of the purchase, lease, order, arrangement for any good, facility, item, or service, for which payment may be made, in whole or in part, under a federal healthcare program, such as Medicare and Medicaid;

- the U.S. civil and criminal false claims laws, including the civil U.S. False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious, or fraudulent or knowingly making, using, or causing to be made or used a false record or statement to avoid, decrease, or conceal an obligation to pay money to the federal government. In addition, the government may assert that a

claim including items and services resulting from a violation of the AKS or FDA promotional standards constitutes a false or fraudulent claim for purposes of the U.S. False Claims Act;

- the U.S. federal Beneficiary Inducement Statute, which prohibits, among other things, the offering or giving of remuneration, which includes, without limitation, any transfer of items or services for free or for less than fair market value, with limited exceptions, to a Medicare or Medicaid beneficiary that the person knows or should know is likely to influence the beneficiary's selection of a particular provider, practitioner, or supplier of items or services reimbursable by a federal or state health program;

- the U.S. Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 ("HITECH"), and their respective implementing regulations (collectively "HIPAA"), which imposes criminal and civil liability for knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private payors, or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statements in connection with the delivery of, or payment for, healthcare benefits, items or services;

- HIPAA also imposes obligations with respect to safeguarding the privacy, security, and transmission of individually identifiable information that constitutes protected health information, including mandatory contractual terms and restrictions on the use and/or disclosure of such information without proper authorization;

- the federal transparency requirements known as the U.S. Physician Payments Sunshine Act, or Open Payments program, created under the Affordable Care Act, which requires certain manufacturers of drugs, devices, biologics, and medical supplies to report annually to the Centers for Medicare & Medicaid Services ("CMS") information related to payments, including certain product development activities such as clinical trials, and other transfers of value made by that entity to covered recipients, currently defined to include doctors, dentists, optometrists, podiatrists, chiropractors, teaching hospitals, physician assistants, nurse practitioners, and certain other healthcare providers and requires certain manufacturers and applicable group purchasing organizations to report ownership and investment interests held by physicians or their immediate family members;

- U.S. price reporting laws, which require companies to calculate and report complex pricing metrics in an accurate and timely manner to government programs. Such laws may not only affect coverage, reimbursement, and pricing for our product candidates, but can also result in civil penalties for late or incorrect reports;

- U.S. consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;

- the FCPA, which prohibits companies and their intermediaries from making, or offering or promising to make, improper payments to non-U.S. officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment;

- certain state and other laws that require pharmaceutical companies to comply with the state standards or pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. government in addition to requiring pharmaceutical manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures;

- certain state and other laws that govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- analogous state and foreign laws and regulations, which may be broader in scope than their federal equivalents.

Numerous federal and state laws and regulations, including federal health information privacy laws, state data breach notification laws, state health information privacy laws and federal and state consumer protection laws (e.g., Section 5 of the Federal Trade Commission Act), that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our collaborators and third-party providers. In December 2023, HHS finalized its Health Data, Technology and Interoperability rule, establishing new standards for transparency, information exchange, and interoperability for health information technology. California has enacted the California Consumer Privacy Act ("CCPA"). The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Additionally, the California Privacy Rights Act amended the CCPA to impose additional data protection obligations on companies doing business in California, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, opt outs for certain uses of sensitive data, and creation of a new California data protection agency authorized to issue substantive regulations. The majority of the provisions went into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. In the United States, states are constantly amending existing laws, requiring attention to frequently changing regulatory requirements.

Furthermore, additional federal measures and efforts have been made to increase price transparency for drug pricing, modify the government program reimbursement methodologies, and provide additional ways for the government to attempt to lower drug prices. For example, the Inflation Reduction Act of 2022 imposes inflation rebates on drug manufacturers for products reimbursed under Medicare Parts B and D if the prices of those products increase at a rate greater than inflation; implements changes to the Medicare Part D benefit that, beginning in 2025, will cap annual out-of-pocket spending at $2,000 while imposing new discount obligations for pharmaceutical manufacturers; and, beginning in 2026, establishes a "maximum fair price" for a selected list of pharmaceutical and biological products covered under Medicare Parts B and D following a price negotiation process with the Centers for Medicare and Medicaid Services. These provisions are not likely to affect our operations in the near term since our product candidates have not received marketing approval.

There have also been other administrative efforts to lower drug prices. In 2022, Executive Order on Lowering Prescription Drug Costs for Americans was issued and directed the secretary of the Department of Health and Human Services to "consider whether to select for testing by the Innovation Center new health care payment and delivery models that would lower drug costs and promote access to innovative drug therapies for beneficiaries enrolled in the Medicare and Medicaid programs, including models that may lead to lower cost-sharing for commonly used drugs and support value-based payment that promotes high-quality care." By 2029, up to 60 pharmaceutical products will be subject to price negotiation. There are likely to be additional changes in the future by federal, state, and foreign governments, and predicting such changes and responding to such changes in a timely manner may be challenging.

Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. There have been a number of federal and state proposals during the last few years that apply to the pricing of pharmaceutical and biopharmaceutical products, limit coverage and reimbursement for drugs and other medical products, require substitution of generic products, standardize access to third-party insurance coverage, and address government control and other changes to the healthcare system in the United States. The federal and state governments may pass legislation designed to reduce the cost of healthcare, and future amendments and new proposals may affect the commercialization of any of our product candidates in ways that we cannot foresee.

For example, in March 2010, the U.S. Congress enacted the Affordable Care Act, which, among other things, included changes to the coverage and payment for products under government health care programs.

Among the provisions of the Affordable Care Act that may be of importance to our potential product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic products, apportioned among these entities according to their market share in certain government healthcare programs, although this fee would not apply to sales of certain products approved exclusively for orphan indications;
- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer

price" for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices and extending rebate liability to prescriptions for individuals enrolled in Medicare Advantage plans;

- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 70% point-of-sale-discount off the negotiated price of applicable products to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient products to be covered under Medicare Part D, increased pursuant to the Bipartisan Budget Act;
- the establishment of a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- the establishment of the Center for Medicare and Medicaid Innovation within CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription product spending;
- introduction of a new average manufacturer price definition for biologics and drugs that are inhaled, infused, instilled, implanted, or injected and not generally dispensed through retail community pharmacies;
- increase in the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and expansion of rebate liability from fee-for-service Medicaid utilization to include the utilization of Medicaid managed care organizations as well;
- establishment of a branded prescription drug fee that pharmaceutical manufacturers of branded prescription drugs must pay to the federal government;
- expansion of the list of covered entities eligible to participate in the 340B drug pricing program;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability; and
- creation of a licensure framework for follow on biologic products.

Recently, CMS finalized regulations that give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the Affordable Care Act for plans sold through such marketplaces. It is unclear what type of impact, if any, efforts such as this will have on our business in the future.

Other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers, including hospitals, imaging centers, and cancer treatment centers, and increased from three to five years the statute of limitations period for the government to recover non-fraudulent overpayments to providers. New laws may result in additional reductions in Medicare and other healthcare funding, which may materially adversely affect customer demand for and affordability of our product candidates and, accordingly, our business, financial condition, results of operations, and prospects. Additional changes that may affect our business include the expansion of new programs such as Medicare payment for performance initiatives for physicians under the Medicare Access and CHIP Reauthorization Act of 2015, which first affected physician payment in 2019. At this time, it is unclear how the introduction of the Medicare quality payment program will impact overall physician reimbursement. In addition, in August 2022, the Inflation Reduction Act of 2022 implemented substantial changes to the Medicare program, including drug pricing reforms and changes to the Medicare Part D benefit design.

Other legislative measures have also been enacted that may impose additional pricing and product development pressures on our business. For example, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain IND products that have completed a phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a drug manufacturer to make its drug product candidates available to eligible patients as a result of the Right to Try Act, but the manufacturer must develop an internal policy and respond to patient requests according to that policy. Also, effective January 1, 2023, the Inflation Reduction Act of 2022 instituted a price cap on

insulin reimbursed through Medicare's prescription drug benefit, and it is possible that, in the future, additional drugs and biologics could be targeted for price caps. We expect that additional foreign, federal, and state healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in limited coverage and reimbursement and reduced demand for our products, post-approval, or additional pricing pressures. Individual states in the United States have also become increasingly active in enacting legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We cannot predict what healthcare reform initiatives may be adopted in the future. Additional federal, state, and foreign legislative and regulatory developments are likely, and we expect ongoing initiatives to increase pressure on drug pricing. Such reforms could have an adverse effect on anticipated revenues from product candidates and may affect our overall financial condition and ability to develop product candidates.

Additional Regulations

In addition to the foregoing, state and federal laws regarding environmental protection and hazardous substances, including the U.S. Occupational Safety and Health Act, the U.S. Resource Conservancy and Recovery Act, and the U.S. Toxic Substances Control Act, all affect our business. These and other state and local laws govern our use, handling, and disposal of various biological, chemical, and radioactive substances used in, and wastes generated by, our operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines.

Employee and Human Capital Resources

Overview

As of March 1, 2024, we have 158 employees. Of these employees, 77% are primarily engaged in research and development activities. None of our employees is represented by a labor union or party to a collective bargaining agreement. We consider our relationship with our employees to be good.

We have attracted a talented group of experienced scientists, drug development experts, and company builders as part of a passionate team of employees. Our team includes experts in genome-editing technologies, cellular engineering, protein science, computational biology, genome sequencing and analysis, structural biology, chemistry, biometrics, translational medicine, pharmacovigilance, process development, analytical development, medical affairs, clinical operations and development, regulatory affairs, and quality assurance and control. Our team of employees includes some of the scientists who invented the technologies we use today in our research and product development and who continue to drive innovation.

We recognize that attracting, developing, and retaining talent at all levels is vital to our continued success. Our employees are our greatest asset, and we aim to create an equitable, inclusive, and collaborative environment with the overall goal of engaging our workforce to support our current pipeline, develop new technologies, and support future business goals, while protecting the long-term interests of our stockholders. We live by our core values: we are driven by patient needs, innovation is in our chRDNA, together we are stronger, and integrity and ethics guide our decision making. We have built a culture where employees are empowered, their ideas are taken seriously, and their contributions are recognized.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, motivating, and engaging our existing and future employees. The principal purposes of our equity and cash incentive plans are to attract, retain, and recognize employees through grants of stock-based compensation awards and payments of performance-based cash bonus awards, which motivate our employees to perform to the best of their abilities and achieve our objectives. We are committed to providing a competitive and comprehensive benefits package to our employees. Our benefits package provides a balance of overall protection along with the flexibility to meet the individual health and wellness needs of our employees. We plan to continue to refine our efforts related to optimizing our use of human capital as we grow, including improvements in the way we hire, develop, reward, and retain employees.

Diversity, Equity, and Inclusion

We are committed to cultivating, fostering, and preserving a culture of diversity, equity, and inclusion (“DEI”). We foster an inclusive environment through respect, collaboration, and candid communication. We embrace and encourage

differences in age, color, disability, ethnicity, family or marital status, gender identity or expression, language, national origin, culture or customs, physical and mental ability, political affiliation, race, religion, sexual orientation, socio-economic status, veteran status, and other characteristics that make our employees unique. We embrace differences in experience and background, and we welcome a diversity of opinions when making decisions. We would not be who we are today without the diversity of our team.

As of March 1, 2024, 51% of our employees identify as female. The ratio of men to women is fairly balanced at each level of our organization; as an example, 47% of our director-level and above employees identify as female. In addition, as of March 1, 2024, 46% of our employees identify as a member of at least one underrepresented group, with 27% identifying as Asian, 6% identifying as Hispanic or Latinx, 3% identifying as Black or African American, and 9% identifying as a member of other underrepresented groups or as a member of two or more underrepresented groups; furthermore, 35% of our director-level and above employees identify as a member of at least one underrepresented group. Our employees span multiple age brackets and bring their unique perspectives and experiences to our organization. As of March 1, 2024, the average age of our employees is 40 years old, and 46% of our workforce is 40 years of age or older. Although we are proud of our efforts and metrics to date, we recognize that there is still more work to be done until the diversity of our workforce matches the diversity of the San Francisco Bay Area.

To champion our efforts in this area, in 2021 we formed an Inclusion Committee comprised of employees from various departments, backgrounds, and levels within our organization. The Inclusion Committee emphasizes our commitment to the importance of DEI and the responsibility of our employees to treat others with dignity and respect at all times. All employees are provided diversity awareness training and unconscious bias training to enhance their knowledge to fulfill this responsibility, in addition to mandatory sexual harassment prevention training. The Inclusion Committee works to identify gaps, respond to feedback provided by peers and present suggestions on our hiring and retention practices and policies to encourage and enforce an environment in which all employees feel included and empowered to achieve their best potential. Management has committed time and resources for this ongoing initiative. Additionally, we support our employee resource groups (“ERGs”), currently focusing on LGTBQ+, Asian-American Hawaiian Pacific Islanders, mental health, and parenting, which allows our employees to connect in ways that are meaningful to their individual needs and which provide a platform for obtaining resources and support at our company.

Involvement in Our Community

Our headquarters are located in Berkeley, California, and many of our employees are alumni of local universities. Our employees are talented and passionate people who are committed to making a difference in our community and beyond. As a company, we actively participate in outreach efforts to increase opportunities for underrepresented groups, including hosting and providing volunteers for science, technology, engineering, and mathematics (“STEM”) programs at local elementary, junior high, and high schools as well as community colleges and universities. Many of our employees speak at local schools about careers in biotechnology and we have hosted students at our facility to engage them in aspects of biotechnology to which they may not have been previously exposed. We look for opportunities to foster the growth of future scientists and a love of science. We provide each of our employees with eight hours of paid volunteer time each year, which can be used for participating in school activities, voter registrations, environmental activities, and the like.

We are environmentally conscious. With this in mind, we strive to mitigate our impact on the environment where possible and pursue innovative ways to grow our business while minimizing our environmental footprint. The City of Berkeley requires companies with 10 or more employees to have a commuter benefits program in place, and we offer pre-tax commuter benefits to ride public transportation, which is connected to our facility through various free shuttle services. Additionally, we provide bicycle vouchers to employees who bike to work and have bike repair tools on site as well as bike storage areas, and our employees have access to electric vehicle charging stations. Our facility is equipped with water stations that filter water to discourage the use of plastic bottles. All refuse generated at our company is sorted among recycle, compost, and landfill. We have moved to electronic documentation and files in most functions.

The Herd at Caribou

We at Caribou refer to ourselves as “the herd.” We encourage and value social interactions among the herd. We hold weekly herd meetings, monthly happy hours, and quarterly events to strengthen our culture and find different ways to interact. Some of these events include contributing to the Alameda Food Bank and participating in San Francisco Bay clean-up events. Weather permitting, we sponsor regular “fun runs” for employees to either run or walk to the shoreline or in the Berkeley hills. We offer yoga in a hybrid in-person/virtual format for all our employees, regardless of location. As we continue to grow, we will find more opportunities to connect our teams, taking into account our different functions and

locations, while focusing on building a culture that is driven by our mission to develop innovative, transformative therapies through novel genome editing for patients with devastating diseases.

Information Available on the Internet

Investors and others should note that we announce material information to our investors using our investor relations website (https://caribou bio.com/investors), our filings with the Securities and Exchange Commission ("SEC"), press releases, public conference calls, and webcasts. We use these channels to communicate with the public about our company, our business, our product candidates and other matters. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, including exhibits, proxy and information statements and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act, are available on our website free of charge as soon as reasonably practicable after we electronically file the material with, or furnish it to, the SEC. The materials we file with or furnish to the SEC are also available at http://www.sec.gov.

Item 1A. Risk Factors.

Investing in shares of our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all of the other information contained in this Annual Report on Form 10-K, including our financial statements and related notes, before making an investment decision. The risks described below are not the only ones facing us. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could materially and adversely affect our business, financial condition, results of operations and prospects, and reputation. In such case, the trading price of shares of our common stock could decline, and you may lose all or part of your investment. This Annual Report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of a number of factors, including the risks described below. See Special Note Regarding Forward-Looking Statements in this Annual Report on Form 10-K.

Risks Relating to Our Financial Position and Need for Additional Capital

We have incurred significant operating losses since our inception and anticipate that we will incur continued operating losses for the foreseeable future and we may not be able to achieve or sustain profitability.

We have incurred significant operating losses each year since our inception. For the years ended December 31, 2023 and 2022, we incurred net losses of $102.1 million and $99.4 million, respectively. As of December 31, 2023, we had an accumulated deficit of $299.3 million. In addition, we have not commercialized any products and have never generated any revenue from product sales. We have devoted almost all of our financial resources to research and development, including our preclinical development activities.

We expect to continue to incur significant expenses and operating losses over the next several years and for the foreseeable future as we seek to advance product candidates through preclinical and clinical development, expand our research and development activities, develop new product candidates, complete preclinical studies and clinical trials, seek regulatory approval and, if we receive approval from the FDA or foreign regulatory authorities, commercialize our products. Furthermore, the costs of advancing product candidates into each succeeding clinical phase tend to increase substantially over time. The total costs to advance any of our product candidates to marketing approval in even a single jurisdiction is substantial. Our prior losses, combined with expected future losses, will continue to have an adverse effect on our stockholders' deficit and working capital. We anticipate that our expenses will increase substantially if and as we:

- progress our clinical trials for our CAR-T product candidates;
- continue our current research programs and our preclinical and clinical development of our other current product candidates and any other product candidates we identify and choose to develop;
- hire additional clinical, quality control, regulatory, and scientific personnel;
- seek to identify additional research programs and additional product candidates;
- further develop our genome-editing technologies;
- acquire or in-license technologies;
- expand, maintain, enforce, and defend our intellectual property estate;
- seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish and expand manufacturing capabilities and supply chain capacity for our product candidates;
- add operational, legal, financial, and management information systems and personnel;
- experience any delays, challenges or other issues associated with any of the above, including the failure of clinical trials meeting endpoints, the generation of unanticipated preclinical study results or clinical trial data subject to differing interpretations, or the occurrence of potential safety issues or other development or regulatory challenges;

- make royalty, milestone, or other payments under current, and any future, in-license or assignment agreements;
- establish a sales, marketing, and distribution infrastructure to commercialize any product candidates for which we obtain marketing approval; and
- continue to operate as a public company.

We are unable to predict the extent of any future losses or when we will become profitable, if at all. Even if we do become profitable, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

We will need substantial additional financing to develop our product candidates and implement our operating plans. If we fail to obtain additional financing, we may be delayed or unable to complete the development and commercialization of our product candidates.

We will continue to need additional capital beyond the proceeds received from our initial public offering ("IPO"), and we may raise capital through equity offerings (including our at-the-market facility), debt financings, collaborations and strategic alliances, licensing arrangements, or other sources.

We expect to spend a substantial amount of capital in the research, development, and manufacture of our product candidates. We expect our expenses to increase in connection with our ongoing activities, particularly as we initiate and continue clinical trials for, and seek marketing approval of, our product candidates. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution to the extent that we do not obtain commercialization partners who will bear the costs for such activities. We may also need to raise additional funds sooner if we choose to pursue additional indications or markets for our product candidates or otherwise expand more rapidly than we presently anticipate. Furthermore, we will continue to incur significant costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. Because our allogeneic cell therapy product candidates are based on new technologies, they require extensive research and development and have substantial manufacturing costs. In addition, clinical costs to treat patients with our product candidates, including treatment of any potential side effects that may arise, will be significant.

As of December 31, 2023, we had cash, cash equivalents, and marketable securities of $372.4 million. We expect our cash, cash equivalents, and marketable securities to be sufficient to fund our current operating plan through at least the next 12 months from the date the consolidated financial statements included in this Annual Report on Form 10-K are issued. Our expectation is based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect.

Our future capital requirements will depend on, and could increase significantly as a result of, many factors, including:

- costs, progress, and results of our product candidate preclinical studies and clinical trials;
- potential delays in our preclinical studies and clinical trials, whether current or planned, due to unforeseen events as well as other factors such as the economic environment or pandemics or other public health crises;
- potential difficulties and delays in receiving regulatory clearances and/or approvals for our product candidates;
- costs and prioritization of our research and development programs as well as costs to acquire or in-license technologies or other product candidates;
- expansion of our workforce or our facilities;
- costs of establishing and maintaining a supply chain for the development and manufacture of our product candidates;
- timing and outcome of regulatory review of our product candidates;
- our ability to establish and maintain collaborations on favorable terms;

- costs of fulfilling our contractual obligations to reimburse certain parties for costs incurred in connection with the prosecution and maintenance of licensed patent rights, including reimbursements owed to The Regents of the University of California;
- achievement of milestones that trigger payments under any of our current license and assignment agreements as well as under any additional agreements we enter into in the future;
- costs of preparing, filing, prosecuting, and maintaining our patent portfolio, including costs associated with administrative proceedings of patent offices;
- litigation costs in the event we seek to enforce our patents against third parties or if we are sued for infringement by third parties as well as for stockholder lawsuits;
- effects of competing technologies, success or failure of products similar to our product candidates, and market developments;
- costs of establishing or contracting for sales and marketing capabilities if we obtain regulatory approvals to market our product candidates; and
- costs of operating as a public company.

Changing circumstances may cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more money than expected because of circumstances beyond our control. We may also need to raise additional capital sooner if we choose to expand programs, personnel, and facilities more rapidly than planned. In any event, we will require additional capital for the further research, development, and commercialization of our product candidates, including potentially establishing our own internal manufacturing capabilities. Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to research, develop, and commercialize our product candidates.

We cannot be certain that additional funding will be available when needed and on acceptable terms, or at all. If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay, or discontinue one or more of our product candidate preclinical studies, clinical trials, or development and commercialization, or we may be unable to expand our operations or otherwise capitalize on our business opportunities, as desired. Any of the above could significantly harm our business, financial condition, results of operations, and prospects and cause the price of our common stock to decline.

Raising additional capital may cause dilution to our stockholders, restrict our operations, and/or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, that we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, and strategic collaboration and licensing arrangements. The terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our common stock to decline. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, licensing or assigning our intellectual property rights, declaring dividends, and possibly other restrictions.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' interests will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders.

Attempting to secure additional financing may also divert our management from our day-to-day activities, which could impair or delay our ability to develop our product candidates. Furthermore, if, in the future, one or more banks or financial institutions enter receivership or become insolvent in response to financial conditions affecting the banking system or financial markets, our ability to access our existing cash, cash equivalents, and marketable securities may be threatened and could have a material impact on our business and financial condition.

If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts. Alternatively, we could be required to seek collaborators for our product candidates at an earlier stage than would otherwise be desirable or on terms

that are less favorable than might otherwise be available. We might need to relinquish or license on unfavorable terms our rights to our product candidates in markets where we otherwise would seek to pursue development and commercialization ourselves, or to license our intellectual property to others who could develop products that will compete with our products. Any of these actions could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We have a limited operating history, which may make it difficult to evaluate our technologies and product candidate development capabilities or to predict our future performance.

We are a clinical-stage biotechnology company formed in 2011, with no products approved for commercial sale, and we have not generated any revenues from product sales. Our operations to date have been limited to financing and staffing our company, developing our technologies, and identifying and developing our product candidates. Our prospects must be considered in light of the uncertainties, risks, expenses, and difficulties frequently encountered by companies in their early stages of operations. We have not yet demonstrated an ability to obtain marketing approval, manufacture at commercial scale, or conduct sales and marketing activities for our product candidates, which are all necessary for successful product commercialization. Consequently, predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing cell therapy products. Our ability to generate product revenue or profits, which we do not expect to occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates, which may never occur. Unless we receive approval from the FDA or other regulatory authorities for our product candidates, we will not have product revenues. We may never be able to develop or commercialize a marketable cell therapy product.

We are early in our development efforts. All of our programs will require clinical development, regulatory approval, manufacturing at commercial scale, distribution channels, a commercial organization, significant marketing efforts, and substantial investment before we generate any revenue from product sales. In addition, our product candidates must be approved for marketing by the FDA before we may commercialize our products in the United States and, if we wish to commercialize our products outside the United States, by foreign regulatory agencies. Furthermore, we will continue to incur costs associated with operating as a public company, including significant legal, accounting, insurance, investor relations, and other expenses.

Additionally, the rapidly evolving nature of the genome-editing and cell therapy fields may make it difficult to evaluate our technologies and product candidates as well as to predict our future performance. Our short history as an operating company makes any assessment of our future success or viability subject to significant uncertainty. We will encounter risks and difficulties, known and unknown, that are frequently experienced by early-stage companies in rapidly evolving fields. As we advance our product candidates, we must transition from a company with a research focus to a company capable of supporting clinical development and, if successful, commercial activities. We may not be successful in such transitions. If we do not address these risks successfully, our business will suffer. Similarly, we expect that our financial condition and operating results may fluctuate significantly from quarter to quarter and year to year due to a variety of factors, many of which are beyond our control. As a result, you should not rely upon the results of any quarterly or annual period as an indicator of future operating performance.

Risks Relating to Our Business, Government Regulation, Technology, and Industry

We are early in our development efforts and it will be many years before we commercialize a product candidate, if ever. If we are unable to advance our product candidates through clinical trials, obtain regulatory approval, and ultimately commercialize our product candidates, or we experience significant delays in doing so, our business will be materially harmed.

We are early in the development of our cell therapy product candidates and have focused our research and development efforts to date on various CRISPR genome-editing technologies, including our chRDNA genome-editing technology, as well as identifying our initial CAR-T cell product candidates. Our future success depends heavily on the successful development of our product candidates. Our ability to generate product revenue, which we do not expect will occur for many years, if ever, will be a result of the successful development and eventual commercialization of our product candidates, which may never occur. Our product candidates may have expected or unexpected adverse side effects or fail to demonstrate safety and efficacy. Additionally, our product candidates may have other characteristics that may make them impractical or prohibitively expensive for large-scale manufacturing. In certain cases, CROs and clinical trial sites may fail to conduct the clinical trials as planned, may fail to comply with applicable requirements, or may deviate from the clinical trial protocols. Furthermore, our product candidates may not receive regulatory approval or, if they do, they may not be accepted by the medical community or patients or may not be competitive with other products that become available. We

currently have no product revenue and we may never be able to successfully develop or commercialize a marketable product.

We must submit IND applications to the FDA to initiate clinical trials in the United States. In September 2020, we announced that the FDA had cleared our IND application for our first product candidate, CB-010, in November 2022, we announced that the FDA had cleared our IND application for our second product candidate, CB-011, and, in October 2023, we announced that the FDA had cleared our IND application for our third product candidate, CB-012. The filing of future IND applications for our other product candidates is subject to additional preclinical research, research-scale and clinical-scale manufacturing, exploration of possible other genome-editing systems, evaluation of potential targets, and other factors yet to be identified. In addition, commencing any new clinical trial is subject to review by the FDA based on the acceptability and sufficiency of our CMC, and preclinical information provided to support our IND applications. If the FDA or foreign regulatory authorities require us to complete additional preclinical studies or we are required to satisfy other requests for additional data or information, our clinical trials may be delayed. Even after we receive and incorporate guidance from the FDA or foreign regulatory authorities, these regulatory authorities could disagree that we have satisfied all requirements to initiate our clinical trials or they may change their position on the acceptability of our trial design or the clinical endpoints selected. They could impose a clinical hold, which may require us to complete additional preclinical studies or clinical trials. The FDA and foreign regulatory authorities may refuse to clear our IND applications. The success of our product candidates will depend on several factors, including the following:

- sufficiency of our financial and other resources;
- acceptance of our chRDNA genome-editing technology;
- ability to develop and deploy armoring technologies so that our product candidates have a competitive edge;
- successful completion of preclinical studies;
- clearance of IND applications to initiate clinical trials;
- successful enrollment in, and completion of, our clinical trials;
- data from our clinical trials that support an acceptable risk-benefit profile of our product candidates for our intended patient populations and indications and demonstrate safety and efficacy;
- establishment of agreements with CMOs for clinical and commercial supplies and scaling up of manufacturing processes and capabilities to support our clinical trials;
- successful development of our internal process development and transfer to larger-scale facilities;
- receipt of regulatory and marketing approvals from applicable regulatory authorities as well as receipt of regulatory exclusivity for our product candidates;
- establishment, maintenance, enforcement, and defense of patent and trade secret protection and other intellectual property rights;
- not infringing, misappropriating, or otherwise violating third-party intellectual property rights;
- entry into collaborations to further the development of our product candidates or for the development of new product candidates;
- establishment of sales, marketing, and distribution capabilities for commercialization of our product candidates if and when approved, whether by us or in collaboration with third parties;
- identification and establishment of a stable supply chain that permits us to procure the necessary materials for our product candidates;
- legal and regulatory compliance by third parties that provide services to us or on our behalf, including but not limited to CMOs, suppliers, and clinical research organizations ("CROs"), some of which may be subject to regulatory investigations;

- the ability of CROs and clinical trial sites to conduct our clinical trials;
- maintenance of a continued acceptable safety profile of products post-approval;
- acceptance of product candidates, if and when approved, by patients, the medical community, and third-party payors;
- effective competition with other therapies and treatment options, including but not limited to autologous CAR-T cell therapies, small molecules, and antibody treatment;
- establishment and maintenance of healthcare coverage and adequate reimbursement; and
- expanding indications and patient populations for our products post-approval.

Our product candidates are cell therapies generated by our novel CRISPR chRDNA genome-editing technologies, which make it difficult to predict the time and cost of developing these product candidates and obtaining regulatory approval. To date, no other products that use these chRDNA genome-editing technologies have advanced into clinical trials or received marketing approval in the United States.

We are concentrating our initial research, development, and manufacturing efforts on our allogeneic CAR-T cell therapies that are intended to treat patients with certain cancers. Before obtaining regulatory approval for the commercial sale of any of our product candidates, we must demonstrate through lengthy, complex, and expensive preclinical studies and clinical trials that our product candidates are both safe and effective for their intended use. The clinical trial requirements of the FDA and other regulatory authorities, and the criteria these regulators use to determine the safety and efficacy of a product candidate, vary substantially according to the type, complexity, novelty, intended use, and target population of our product candidates. The outcome of preclinical studies and clinical trials is inherently uncertain. Preclinical results in animals may not be predictive of safety or efficacy in humans. Failure can occur at any time during the preclinical study and clinical trial processes and because we have never successfully commercialized a product and our first product candidate is in an early stage of clinical development, there is a high risk of failure. We may never succeed in developing marketable products.

Approval processes by the FDA or other regulatory authorities for existing autologous anti-CD19 and anti-BCMA CAR-T cell therapies may not be indicative of what these regulatory authorities will require for approval of our allogeneic anti-CD19 CAR-T cell therapy or our other product candidates. Also, although we expect reduced variability in our allogeneic products candidates compared to autologous products, we do not have any clinical data supporting benefits of lower variability, and the use of healthy donor material may create separate variability challenges for us. Moreover, our product candidates may not perform successfully in clinical trials or may be associated with serious adverse events ("SAEs") that distinguish them from the autologous anti-CD19 and anti-BCMA CAR-T therapies that have previously been approved. For instance, allogeneic product candidates may result in GvHD, which is not experienced with autologous products. GvHD results when allogeneic T cells see the patient's normal tissue as foreign and attack and damage those cells. Even if we collect promising initial clinical data for our product candidates, longer-term data may reveal adverse events or responses that are not durable. Negative clinical outcomes would significantly impact our business.

In addition, approved autologous CAR-T therapies and those under development have shown frequent rates of cytokine release syndrome, neurotoxicity, serious infections, prolonged cytopenia, hypogammaglobulinemia, and other SAEs that have resulted in patient death. There may be similar adverse events for our allogeneic CAR-T and CAR-NK cell therapy product candidates, including patient death. Moreover, patients eligible for allogeneic CAR-T cell therapies but ineligible for autologous CAR-T cell therapies due to aggressive cancer or an inability to wait for autologous CAR-T cell therapies may be at greater risk for complications and death from therapy. Our allogeneic CAR-T cell product candidates may also cause unique adverse events related to the differences between the donor and patients, such as GvHD or infusion reactions. Our product candidates may not be successful in limiting the risk of GvHD, exhaustion of the CAR-T cells, or premature rejection by a patient's immune system. If significant GvHD or other SAEs are observed with the administration of our product candidates, or if any of our product candidates are viewed as less safe or effective than autologous therapies or other allogeneic therapies, our ability to develop other allogeneic therapies may be adversely affected.

We use our CRISPR chRDNA genome-editing platform to generate our product candidates, and we believe our chRDNA guides significantly improve the specificity of CRISPR genome editing (e.g., by reducing the number of off-target events). CRISPR genome editing generally is relatively new; to date, only one cell therapy product using CRISPR-Cas9 genome editing has been approved in the United States although clinical trials of additional product candidates based on CRISPR-Cas9 and other genome-editing technologies are underway. As a result, the regulatory approval process for cell

therapy product candidates such as ours is uncertain and may be more expensive and take longer than the approval process for product candidates based on better known or more extensively studied technologies. As such, it is difficult to accurately predict the developmental challenges we may face as we progress our product candidates through preclinical studies and clinical trials. There may be long-term adverse effects from treatment with our product candidates resulting from the use of our chRDNA genome-editing technologies that we cannot predict with the knowledge we have today. Also, animal models may not exist for some of the diseases we choose to pursue in our programs, which may complicate and increase the cost of preclinical research. As a result of these factors, it is difficult for us to predict the time and cost of our product candidate development, and we cannot predict whether the application of our chRDNA technologies, or other genome-editing technologies we may use in the future, will result in the identification, development, preclinical studies, and clinical trials to support regulatory approval of any of our cell therapy product candidates. There can be no assurance that any development problems we experience in the future related to our chRDNA technologies or any of our research programs will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may not achieve the desired safety and efficacy of our product candidates. Also, we may not sufficiently improve genome-editing specificity and our genome editing may have off-target events. Moreover, we may not be able to achieve a high degree of on-target gene knockout and insertion efficiency in developing our product candidates. Any of these factors may prevent us from completing our clinical trials, delay or cause us to fail to meet our clinical trial endpoints, or lead us to fail to commercialize any of our cell therapy product candidates.

We may also experience delays in developing robust, reproducible, and scalable manufacturing processes and transferring those processes to CMOs, which may prevent us from completing our clinical trials or commercializing our products on a timely or profitable basis, if at all. Currently, we have only manufactured our CB-010, CB-011, and CB-012 product candidates for clinical trials. In addition, since we are in the early stages of clinical development, we do not know the doses to be used in later phase 2 or pivotal phase 3 clinical trials necessary to evaluate the efficacy of our product candidates, which will affect the manufacturing requirements for our product candidates. Finding a suitable dose, such as a MTD or, as applicable, a RP2D, for our cell therapy product candidates may delay our anticipated clinical development timelines and prolong our clinical trials. Accordingly, our expectations regarding our costs of manufacturing may vary significantly as we develop our product candidates and understand these critical factors. Such factors may delay or keep us from bringing a product candidate to market and could decrease our ability to generate sufficient product revenue, which could harm our business, financial condition, results of operations, and prospects.

Manufacturing of our product candidates is complex and we could experience manufacturing problems during our clinical trials, which could delay or limit commercialization of our product candidates.

The manufacturing processes used to produce our cell therapy product candidates are and will be complex, as our product candidates are new products. Several factors could cause production interruptions including facility contaminations; shortages or quality problems; contamination of healthy donor cells, chRDNA guides, Cas9 and Cas12a proteins, viruses, iPSC master cell banks or working cell banks; natural disasters, including pandemics and other public health crises; labor shortages and strikes; lack of experienced scientific, quality control, and manufacturing personnel; human error; or other disruptions in the operations of our suppliers and CMOs. We conduct process development activities at our facilities and we may experience personnel and supply shortages. Problems with our manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims, or insufficient inventory. We may encounter problems achieving adequate quantities and quality of clinical grade materials that meet FDA or other applicable standards or specifications with consistent and acceptable production yields and costs.

As our product candidates proceed through preclinical studies to clinical trials to regulatory review, and potential marketing approval and commercialization, it is common that various aspects of our manufacturing methods will be altered along the way to optimize processes and results. Such changes carry the risk that intended objectives will not be achieved. If we make any such changes, our product candidates could perform differently and affect the results of clinical trials conducted with the altered materials. Such changes may also require additional testing as well as notification to or approval from the FDA or other regulatory authorities, which could delay completion of our clinical trials, require bridging clinical trials, require repetition of one or more clinical trials, increase clinical trial costs, delay approval of our product candidates, if any, and ultimately jeopardize commercialization.

If we receive marketing approval for a product candidate, the FDA and other regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA or other regulatory authorities may require that we not distribute a lot until the relevant agency authorizes its release. Slight deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls.

Problems in our manufacturing processes could restrict our ability to meet market demand for our products. All these factors could be costly to us and otherwise harm our business, financial condition, results of operations, and prospects.

Our business is highly dependent on the success of our product candidates, which will require significant additional preclinical studies and and/or human clinical trials before we can seek regulatory approval and potentially commercialize our product candidates. If we are unable to advance our preclinical studies and clinical trials and obtain regulatory approval for, and successfully commercialize, our product candidates for the treatment of patients in approved indications, or if we are substantially delayed in doing so, our business will be significantly harmed.

Our business and future success depends on our ability to advance our product candidates through preclinical studies and clinical trials, obtain regulatory approval for, and successfully commercialize, our product candidates. The failure of our product candidates in clinical trials, or the failure of other companies' allogeneic anti-CD19 CAR-T and allogeneic anti-BCMA CAR-T cell therapies, including for reasons due to safety, efficacy, or the durability of response, may impede our ability to develop not only CB-010, CB-011, and CB-012 but our other CAR-T and CAR-NK product candidates as well, and may significantly influence physicians' and regulatory authorities' opinions with regard to the viability of our entire pipeline of allogeneic cell therapies. In order to submit IND applications for our other product candidates, we will need to complete many objectives, such as our preclinical research of product candidates still in discovery and advancement of cGMP conditions for our product candidates. If we are unable to achieve any of these objectives, we may not be able to submit other IND applications in a timely manner or at all, which would significantly harm our business.

We may not be successful in our efforts to identify and successfully research and develop additional product candidates and may expend our limited resources to pursue particular product candidates or indications while failing to capitalize on other product candidates or indications that may be more profitable, or for which there is a greater likelihood of commercial success.

Part of our business strategy involves identifying and developing new cell therapy product candidates. The process by which we identify product candidates may fail to yield successful product candidates for a number of reasons, including:

- we may not be able to assemble sufficient resources to identify or acquire additional product candidates;
- competitors may develop alternative therapies that render new product candidates obsolete or less attractive;
- product candidates we develop or acquire may be covered by third-party intellectual property rights;
- new product candidates may, on further study, be shown to have adverse side effects, toxicities, or other characteristics that indicate that they are unlikely to receive marketing approval or achieve market acceptance;
- new product candidates may not be safe or effective;
- the market for a new product candidate may change so that the continued development of that product candidate is no longer reasonable; and
- we may not be able to produce new product candidates in commercial quantities at an acceptable cost, or at all.

We have limited financial and managerial resources. We are focused initially on allogeneic CAR-T and CAR-NK cell therapies and, as a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to timely capitalize on viable commercial products or profitable market opportunities. Our spending on current and future product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements when it would have been more advantageous for us to retain sole development and commercialization rights to that product candidate.

If we experience delays or difficulties enrolling patients in the clinical trials for our product candidates, including our CB-010, CB-011, and CB-012 product candidates, our ability to advance our product candidates through clinical development and the regulatory process could be delayed or prevented.

The timely completion of clinical trials depends, among other things, on our ability to enroll a sufficient number of patients who remain in the trial until its conclusion. We may encounter delays in enrolling or be unable to enroll a

sufficient number of patients to complete any of our clinical trials and, even if patients are enrolled, they may withdraw from our clinical trials before completion. For our current clinical trials, we have entered into contracts with CROs, as well as clinical trial agreements with the sites participating in our clinical trials. Patient selection and enrollment may be challenging; additionally, the protocols for our ongoing clinical trials specifically exclude patients with certain prior treatments as well as other conditions.

Our current and future clinical trials, will compete for enrollment of patients with other clinical trials for product candidates that are in the same cell therapeutic areas with the same or similar study populations as our product candidates. Our clinical trials will also compete for enrollment of patients with other clinical trials for product candidates based on non-cellular modalities, such as small molecules and antibodies, that are intended for the same or similar study populations as our product candidates. This competition will reduce the number and types of patients available to us because some patients who might opt to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors. Additionally, since the number of qualified and experienced clinical investigators for therapeutic areas is limited, some of our clinical trial sites may be also conducting clinical trials for some of our competitors, which may reduce the number of patients who are available for our clinical trials at that clinical trial site. Moreover, because our product candidates represent a departure from more commonly used methods for cancer treatment, potential patients and their doctors may be inclined to use conventional therapies, such as chemotherapy, HSC transplantation, or autologous CAR-T cell therapies, rather than refer patients to our clinical trials. Because our cell therapy product candidates are edited with CRISPR chRDNA guides, our products may be perceived to have additional or greater safety risks. Patients eligible for allogeneic CAR-T cell therapies but ineligible for autologous CAR-T cell therapies may be difficult to treat due to advanced and aggressive cancers and may fail to experience improved outcomes and be at greater risk for complications and death from our product candidates. If patients are unwilling to participate in our cell therapy trials, the timeline for recruiting patients, conducting clinical trials, and obtaining regulatory approval of any of our product candidates may be delayed.

In addition, the enrollment of patients depends on many factors, including:

- severity or stage of the type of cancer under investigation;
- size of the patient population and process for identifying patients;
- design of the clinical trial protocol;
- regulatory hold on clinical trial recruitment because of unexpected safety events;
- availability of eligible prospective patients who are otherwise eligible patients for competitive clinical trials;
- availability and efficacy of approved alternative treatments for the disease under investigation;
- ability to obtain and maintain patient consent;
- risk that enrolled patients will drop out before completion of the trial;
- eligibility and exclusion criteria for the trial in question;
- perceived risks and benefits of our product candidates;
- perceived risks and benefits of genome-editing and cell therapies;
- perceived risks and benefits of participating in a clinical trial;
- efforts by clinical sites and investigators to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- proximity and availability of clinical trial sites for prospective patients; and
- interruptions, delays, or staffing shortages resulting from pandemics or other public health crises.

Enrollment delays in our clinical trials may result in increased development costs for any product candidates we may develop, which may cause our stock price to decline and limit our ability to obtain additional financing. If we have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or

terminate our current clinical trials, or future clinical trials, and postpone or forgo seeking marketing approval, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects.

Clinical trials are expensive, time-consuming, and subject to uncertainty. We cannot guarantee that any of our clinical trials will be conducted as planned or completed on schedule, if at all. Issues may arise that could suspend or terminate our clinical trials. A failure of one or more of our clinical trials may occur at any stage of testing, and our future clinical trials may not be successful.

Events that may prevent successful or timely completion of clinical development include:

- the FDA or comparable foreign regulatory authorities disagreeing as to the design or implementation of our clinical trials;
- delays or failure to obtain regulatory clearance to initiate our clinical trials, as well as delays or failures to obtain any necessary approvals by the clinical sites;
- delays, suspension, or termination of our clinical trials by the clinical sites;
- modification of clinical trial protocols;
- delays in reaching agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites, as well as possible future breaches of such agreements;
- failure to manufacture sufficient quantities of our product candidates for use in our clinical trials;
- failure by CMOs, suppliers, CROs, or clinical trial sites to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- imposition of a temporary or permanent clinical hold by us, IRBs for the institutions at which such trials are being conducted, or by the FDA or other regulatory authorities for safety or other reasons, such as a result of a new safety finding in a clinical trial on a similar product by one of our competitors, that presents unreasonable risk to clinical trial participants;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which we developed our clinical development plan, which may require new or additional trials;
- the cost of clinical trials of our product candidates being greater than we anticipated;
- insufficient funding to continue clinical trials with our product candidates;
- the emergence of unforeseen safety issues or undesirable side effects;
- clinical trials of our product candidates producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical trials or abandon development of our product candidates;
- inability to establish clinical trial endpoints that applicable regulatory authorities consider clinically meaningful, or, if we seek accelerated approval, that applicable regulatory authorities consider likely to predict clinical benefit;
- regulators withdrawing their approval of a product or imposing restrictions on its distribution; and
- interruptions, delays, or staffing shortages resulting from pandemics or other public health crises.

If (i) we are required to extend the duration of any clinical trials or to conduct additional preclinical studies or clinical trials or other testing of our product candidates beyond those that we currently contemplate; (ii) we are unable to successfully complete preclinical studies or clinical trials of our product candidates or other testing; (iii) the results of these

trials, studies, or tests are negative or produce inconclusive results; (iv) there are safety concerns; or (v) we determine that the observed safety or efficacy profile would not be competitive in the marketplace, we may:

- abandon the development of one or more product candidates;
- incur unplanned costs;
- be delayed in obtaining marketing approval for our product candidates or not obtain marketing approval at all;
- obtain marketing approval in some jurisdictions and not in others;
- obtain marketing approval for indications or patient populations that are not as broad as we intended or designed;
- obtain marketing approval with labeling that includes significant use restrictions or safety warnings, including black box warnings;
- be subject to additional post-marketing requirements; or
- have regulatory agencies remove the product from the market or we voluntarily withdraw the product from the market after obtaining marketing approval.

Our clinical trials may fail to adequately demonstrate the safety and efficacy of any of our product candidates and, if this happens, the development of our product candidates may be delayed or unsuccessful, which could prevent or delay regulatory approval and commercialization.

Our product candidates are in various stages of preclinical and clinical development. If we encounter safety or efficacy problems in our ongoing or future studies, our developmental plans and business could be significantly harmed. Product candidates in later stages of clinical trials may fail to show the desired safety profiles and efficacy results despite having progressed through initial clinical trials. A number of companies in the biopharmaceutical industry have suffered significant setbacks in advanced clinical trials due to lack of efficacy or adverse safety profiles, notwithstanding promising results in earlier trials. Based upon negative or inconclusive results, we may decide, or regulatory agencies may require us, to conduct additional clinical trials or preclinical studies.

In addition, data obtained from clinical trials are susceptible to varying interpretations, and regulatory agencies may not interpret our data as favorably as we do, which may delay, limit, or prevent regulatory approval.

In addition, the design of a clinical trial can determine whether its results will support approval of our product candidates, and flaws in the design of a clinical trial may not be apparent until the clinical trial is well advanced. We have limited experience designing clinical trials and may be unable to design and execute a clinical trial that will support regulatory approval.

From time to time, we may publish initial, interim, or preliminary data from our clinical trials. Initial, interim, or preliminary data from clinical trials are subject to the risk that one or more of the clinical outcomes may materially and adversely change as patient enrollment continues, and additional and long-term patient data become available, including data respect to efficacy, duration of response, and/or safety. Additional clinical data may not support or may contradict the findings of the initial, interim, or preliminary data reported earlier. Initial, interim, or preliminary clinical trial data may be based on a limited number of patients and are subject to the risk that they will not ultimately be predictive of the safety and/or efficacy of the final product candidate. We also make assumptions, estimations, calculations, and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully evaluate all data at the time of publishing initial, interim, or preliminary data. These data also remain subject to audit and verification procedures that may result in the final data being materially different from the data we previously published. The information that we choose to disclose publicly regarding preclinical studies or clinical trials is typically a summary of extensive information, and others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure, and any information we determine not to disclose may ultimately be deemed significant with respect to future decisions, conclusions, views, activities, or otherwise regarding a particular product candidate or our product candidates generally. As a result, initial, interim, and preliminary data should be viewed with caution until the final data are available. Moreover, initial, interim, and preliminary data are subject to the risk that one or more of the clinical outcomes may materially and adversely change as more patient data become available when patients mature on study, dose levels change, patient enrollment continues, or, for final data, as other ongoing or future clinical trials with a product candidate further develop.

Past results of clinical trials may not be predictive of future results. Unfavorable differences between initial, interim, or preliminary data and final data could significantly harm our business prospects and may cause the trading price of our common stock to decline significantly.

Because of these risks, our product candidates may fail or encounter difficulties in clinical trials. If we are unable to advance our product candidates through clinical trials to seek marketing approval, our business, financial condition, results of operations, and prospects will be materially harmed.

If our product candidates cause serious adverse events or undesirable side effects, including injury and death, or have other properties that could delay or prevent regulatory approval, they would have limited or no commercial potential.

Product candidates we develop may be associated with undesirable or unacceptable side effects, unexpected characteristics, or other SAEs, including death. Immunotherapy, and its method of action of harnessing the immune system, is powerful and could lead to serious side effects that we only discover in clinical trials. In addition to potential SAEs from the immune system or side effects caused by our product candidates currently in clinical trials, or any product candidate we may develop and advance into one or more clinical trials, the product candidate administration process and related procedures may also cause undesirable side effects. Patients who enroll in our current clinical trial undergo a lymphodepletion regimen, including administration of fludarabine and cyclophosphamide, which can lead to SAEs. Because these regimens will cause a transient and sometimes prolonged blood count suppression, patients have an increased risk of leukopenia, anemia, thrombocytopenia bleeding, or infection, which could ultimately lead to death. Although we educate clinical site personnel administering our cell therapy product candidates to understand the side effect profiles for our product candidates, inadequate recognition or management of the potential side effects of our product candidates could result in patient injury or death. If any undesirable or unacceptable side effects, unexpected characteristics, or other SAEs occur, our clinical trials could be suspended or terminated, and our business and reputation could suffer substantial harm.

There can be no assurance that we will resolve any adverse event related to any of our products to the satisfaction of the FDA or any regulatory agency in a timely manner or at all. If we are unable to demonstrate that such adverse events were caused by factors other than our product candidates, the FDA or other regulatory authorities could order us to cease further clinical trials of, or deny approval of, our product candidates. Even if we demonstrate that such SAEs are not product candidate-related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete our clinical trials. Moreover, if we elect, or are required, to delay, suspend, or terminate any clinical trial of any of our product candidates, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from these product candidates may be delayed or eliminated. Any of these occurrences may harm our business, financial condition, results of operations, and prospects.

The FDA or other regulatory agencies may disagree with our regulatory plans and we may fail to obtain regulatory approval of our cell therapy product candidates.

If and when each of our phase 1 clinical trials for our CAR-T product candidates is completed and, assuming positive data, we will propose to the FDA that such product candidate advance to a pivotal phase 3 clinical trial. Although the FDA has found substantial evidence to support approval outside of the traditional phase 1, phase 2, and phase 3 framework for the approved autologous anti-CD19 and anti-BCMA CAR-T cell therapies, the general approach for FDA approval of a new biologic is for the sponsor to provide dispositive data from at least two adequate and well-controlled clinical trials of the relevant biologic in the applicable patient population. Such clinical trials typically involve hundreds of patients, have significant costs, and take years to complete. We do not have agreement or guidance from the FDA that our regulatory development plans will be sufficient for submission of a BLA. For example, the FDA may require that we conduct a comparative trial against an approved therapy, such as an approved autologous CAR-T cell therapy, which would significantly delay our development timelines and require substantially more resources. In addition, the FDA may limit our evaluation to patients who have failed or who are ineligible for autologous therapy, patients who may be difficult to treat, or patients with advanced and aggressive cancer, and our product candidates may fail to improve outcomes for those patients.

In addition, the standard of care may change with the approval of new products in the same indications to which our cell therapy product candidates are directed. This may result in the FDA or other regulatory authorities requesting additional studies to show that our product candidate is comparable or superior to the new products.

Our clinical trial results may also not support marketing approval. In addition, our product candidates could fail to receive regulatory approval for many reasons, including:

- the FDA or other regulatory authorities may disagree with the design or implementation of our clinical trials;
- we may be unable to demonstrate to the satisfaction of the FDA or other regulatory authorities that our product candidates are safe and effective for their proposed indications;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or other regulatory authorities for approval, including due to heterogeneity of patient populations;
- we may be unable to demonstrate that the clinical and other benefits of our product candidates outweigh the safety risks;
- the data collected from clinical trials of our product candidates may not be sufficient to the satisfaction of the FDA or other regulatory authorities to support the submission of a BLA or a similar filing in a foreign jurisdiction or to support commercial reimbursement or reimbursement under publicly-funded health systems;
- new information or data indicating safety concerns with CAR-T cell therapies may result in the FDA or other regulatory authorities declining to approve or requiring additional clinical data for our product candidates;
- the FDA or other authorities will review our manufacturing processes and inspect our CMOs' facilities and may not approve our manufacturing processes or CMOs' facilities; and
- the approval policies or regulations of the FDA or other regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

Even if we comply with all FDA requests, we may still fail to obtain regulatory approval. We cannot be sure that we will ever obtain regulatory clearance for our product candidates. Failure to obtain FDA approval of our product candidates will severely undermine our business by leaving us without a commercially marketable product in the United States, and therefore without any source of revenues from product sales in the United States, until another product candidate can be developed or obtained and ultimately approved.

Even if we complete the necessary preclinical studies and clinical trials, the regulatory approval process is expensive, time-consuming, and uncertain, and we may be unable to obtain the regulatory approvals necessary for the commercialization of our product candidates; furthermore, if there are delays in obtaining regulatory approvals, we may not be able to commercialize our products, may lose competitive lead time, and our ability to generate revenues will be materially impaired.

The process of obtaining marketing approvals, both in the United States and in other jurisdictions, is expensive, may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. It is impossible to predict if or when any of our product candidates will prove to be safe and effective in humans or if we will receive regulatory approval for such product candidates. The risk of failure through the development process is high. Any product candidates we may develop, and the activities associated with their development and commercialization, including their manufacture, preclinical and clinical development, safety, efficacy, recordkeeping, labeling, storage, advertising, promotion, sale, and distribution, are subject to comprehensive regulation by the FDA and other regulatory authorities.

Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. We have not received approval or authorization to market any product candidates from regulatory authorities in any jurisdiction and it is possible that none of our product candidates or any product candidates we may seek to develop in the future will ever obtain marketing approval or commercialization. We have not previously submitted a BLA to the FDA or made a similar submission to any foreign regulatory authority. A BLA must include extensive preclinical and clinical data and supporting information to establish our product candidate's safety and efficacy for each desired indication. The BLA must also include significant information regarding the chemistry, manufacturing, and controls for our product. Any product candidates we develop may not be effective; may be only moderately effective; or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use. The FDA and other regulatory authorities have substantial discretion in the approval process and may refuse to accept our BLA applications and decide that our data are insufficient and require additional preclinical studies or clinical trials. The same may happen with review of our product

candidates by foreign regulatory authorities. In addition, varying interpretations of the data obtained from preclinical studies and clinical trials could delay, limit, or prevent marketing approval of our product candidates. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render our approved product not commercially viable. If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we may develop, the commercial prospects for those product candidates and our ability to generate revenues will be materially impaired and we may lose competitive lead time as similar products enter the market.

We expect the innovative nature of our product candidates to create further challenges in obtaining regulatory approval. For example, the FDA has limited experience with the development of allogeneic T cell and NK cell therapies for cancer and other diseases. We may also request regulatory approval of future CAR-T or CAR-NK cell therapy product candidates by target, regardless of cancer type or origin, which the FDA may have difficulty accepting if our clinical trials have only involved cancers of certain types or origins. The FDA may also require a panel of experts, referred to as an Advisory Committee, to deliberate on the adequacy of the safety and efficacy data. The opinion of an Advisory Committee, although not binding, may have a significant impact on our ability to obtain marketing approval of our product candidates based on our completed clinical trials, as the FDA often adheres to an Advisory Committee's recommendations. Accordingly, the regulatory approval pathway for our product candidates may be uncertain, complex, expensive, and lengthy, and approval may not be obtained.

The regulatory landscape that will govern our product candidates is uncertain; regulations relating to more established gene therapy and cell therapy products are still developing, and changes in regulatory requirements could result in delays or discontinuation of development of our product candidates or unexpected costs in obtaining regulatory approval.

Because we are developing CAR-T and CAR-NK cell therapy product candidates that are unique biological entities, the regulatory requirements to which we will be subject are not entirely clear. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. For example, regulatory requirements governing gene therapy products and cell therapy products have changed frequently and may continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. Gene therapy clinical trials are also subject to additional review and oversight by an IBC. Although the FDA decides whether individual gene therapy protocols may proceed, review processes and determinations of other reviewing bodies can impede or delay the initiation of a clinical trial, even if the FDA has reviewed the study and cleared its initiation. Conversely, the FDA can place an IND application on clinical hold even if such other entities have provided a favorable review. In addition, regulatory agencies, including the FDA, develop and issue guidance documents with which we, in practice, must comply, even if the agencies state that the documents only represent the current thinking of the agencies and are not binding. These documents may provide additional guidance and recommendations regarding the testing, design, development, and manufacturing of cell therapy products. Failure to comply with such regulatory agency guidance could delay or prevent regulatory approval of our product candidates. The content of such guidance documents may change in the future, which could add to the cost, time, and resources that are required for completion of our preclinical studies, clinical trials, or regulatory approvals.

We may not receive additional priority review, such as RMAT designation, breakthrough therapy designation, or fast track designation, by the FDA for our allogeneic CAR-T and CAR-NK cell therapies.

We may continue to apply for certain expedited programs in the United States, such as RMAT, breakthrough therapy, fast track, or priority review programs. The FDA granted RMAT designation for our CB-010 product candidate for r/r LBCL as well as fast track designation for r/r B-NHL. The FDA granted fast track designation for our CB-011 product candidate in r/r MM. Although obtaining each of these designations has specific and different criteria, they are reserved for therapeutic products that are intended for serious diseases, and each designation offers certain benefits to prioritize the review and approval of such therapeutic option, which may include rolling reviews, intensive guidance, or approval based on surrogate endpoint or an intermediate clinical endpoint that is reasonably likely to predict a drug's clinical benefit. However, there is no assurance that we will be able to obtain such designations in the future and, even with expedited designation, we may ultimately fail to obtain FDA's full approval for our product candidates, or the approved indication may be narrower than the indication covered by the designation.

We may continue to seek orphan drug designation for our allogeneic CAR-T and CAR-NK cell therapy product candidates across various indications, but we may not be able to obtain such designations or to maintain the benefits

associated with orphan drug designation, including market exclusivity, which may cause our revenue, if any, to be reduced.

We may submit applications to FDA for additional orphan drug designation for our allogeneic CAR-T and CAR-NK cell therapy product candidates in specific orphan indications in which there is a medically plausible basis for the use of these products. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is intended to treat a rare disease or condition, defined as a patient population of fewer than 200,000 in the United States, or a patient population greater than 200,000 in the United States where there is no reasonable expectation that the cost of developing the drug will be recovered from sales in the United States.

Although we received orphan drug designation from the FDA for our CB-010 product candidate in FL and for our CB-011 product candidate in the treatment of MM, there is no guarantee that we will obtain additional designations for other indications or for our other product candidates as the FDA may decline future requests if it determines that our product candidates and the proposed indications do not meet the threshold for the orphan drug designation. Even if we obtain additional orphan drug designations, we may not be the first company to obtain FDA approval for the orphan drug indication, in which case exclusive marketing rights would not be available to us. In addition, exclusive marketing rights in the United States may be limited if we seek approval for an indication broader than the orphan designated indication and may be lost if the FDA later determines that the request for designation was materially defective, we are unable to ensure sufficient quantities of the product to meet the needs of patients with the rare disease or condition, or if a subsequent applicant demonstrates clinical superiority over our products.

In addition, there remains some uncertainty regarding the legal and regulatory framework for orphan drug exclusivity. In September 2021, the U.S. Court of Appeals for the Eleventh Circuit agreed with a pharmaceutical company's position that once an orphan drug is approved for a disease or condition, the FDA may not approve another drug for the same disease or condition, even if for different uses or indications that the FDA has not approved. However, in January 2023, the FDA stated that it will continue to tie the applicability of the orphan drug exclusivity to the specific uses or indications, rather than diseases or conditions, despite the loss. Thus, any future orphan drug exclusivity may be blocked if another company receives approval before us for an indication for a disease or a condition, even if our orphan drug designation was for a different indication.

Our allogeneic CAR-T and CAR-NK cell therapy product candidates will be regulated as biological products, or biologics, and therefore may be subject to uncertainty regarding regulatory exclusivity or maintaining regulatory approval.

Under the BPCIA, the FDA has the authority to review and approve biosimilar biologics, including the possible designation of a biosimilar as "interchangeable" based on its similarity to an approved biologic. An application for a biosimilar product cannot be approved by the FDA until 12 years after the reference product was approved under a BLA. We believe that our product candidates should qualify for the 12-year period of exclusivity. However, some uncertainty over interpretation of the law remains, and there is a risk that this exclusivity could be shortened due to congressional action or otherwise, or that the FDA will not consider our product candidates to be reference products for competing products, potentially creating the opportunity for biosimilar competition sooner than anticipated. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of the reference products in a way that is similar to traditional generic substitution for drug products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

Even if we obtain marketing approvals for our product candidates, the terms of such approvals and ongoing regulation of our products could require substantial expenditure of resources and may limit how we manufacture and market our products, which could materially impair our ability to generate revenues. Any product candidate for which we obtain marketing approval could be subject to restrictions or withdrawal from the market, and we may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our products, when and if any of them are approved.

Even if we receive marketing approval for a product candidate, the approval may be subject to limitations on the indicated uses for which the product may be marketed or to the conditions of approval or contain requirements for costly post-marketing testing and studies to further assess the safety or efficacy of the product. The FDA also may place other conditions on our approval, including the requirement for a REMS to ensure the safe use of the product by reinforcing medication use behaviors and actions. If the FDA concludes a REMS is needed, we must submit a proposed REMS before our product candidate will be eligible to receive marketing approval. A REMS could include medication guides, physician communication plans, or other elements to ensure safe use, such as restricted distribution methods, patient registries, and

other risk minimization tools. Certain REMS programs can significantly impact and restrict the marketability of our products, even if our products are approved.

The FDA's policies may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidates. If we are slow to address or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval that we may have obtained, which would adversely affect our business, prospects, and ability to achieve or sustain profitability. Any government investigation of alleged violations of law, including investigations of any of our suppliers or CMOs, could require us to expend significant time and resources in response and could generate negative publicity. Accordingly, we will need to continue to expend time, money, and effort on regulatory compliance activities. If we are not able to comply with post-approval regulatory requirements, we could have the marketing approval for our products withdrawn by regulatory authorities and our ability to market any product candidates could be limited, which could adversely affect our ability to achieve or sustain profitability. Furthermore, the cost of compliance with post-approval regulations, including REMS, may have a negative effect on our business, financial condition, results of operations, and prospects.

The FDA and other regulatory authorities closely regulate the post-approval marketing and promotion of biologics to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA and other regulatory authorities impose stringent restrictions on off-label promotion, and if we market our products for unapproved indications, including off-label indications, we may be subject to enforcement action for off-label marketing by the FDA and other federal and state enforcement agencies, including the DOJ. Violation of the FDCA and other statutes, including the federal False Claims Act, relating to the promotion and advertising of prescription products, may also lead to investigations or allegations of violations of federal and state healthcare fraud and abuse laws and state consumer protection laws.

In addition, later discovery of previously unknown problems with our products or the manufacturing of our products, may cause:

- restrictions on our products or the manufacturing of our products;
- restrictions on the labeling or marketing of our products;
- restrictions on the exportation, distribution, or use of our products;
- requirements to conduct post-marketing clinical trials;
- receipt of warning or untitled letters;
- withdrawal of our products from the market;
- refusal to approve pending BLAs or BLA supplements that we submit;
- recall of our products;
- fines, restitution, or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals;
- suspension of any ongoing clinical trials;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity and adversely affect our reputation. The occurrence of any event or penalty described above may inhibit our ability to commercialize any product candidates we develop and adversely affect our business, financial condition, results of operations, and prospects.

We may never obtain approval to commercialize our product candidates outside the United States, which could limit our ability to recognize the full market potential of our product candidates and could materially impair our ability to generate revenues.

In order to market and sell any of our product candidates in the EU or other foreign jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and jurisdictions and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all the risks associated with obtaining FDA approval. In addition, in many countries, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other jurisdictions. The failure to obtain approval in one jurisdiction may negatively impact our ability to obtain approval elsewhere. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our product candidates in multiple jurisdictions, which could materially impair our ability to generate revenue.

Following the United Kingdom's exit from the EU in 2020 (commonly referred to as "Brexit"), the EU and United Kingdom entered into the EU-UK Trade and Cooperation Agreement, which was entered into force permanently on May 1, 2021. The agreement provides details on how some aspects of the United Kingdom and the EU's relationship regarding pharmaceutical products will operate; however, there are still many uncertainties. Since the regulatory framework in the United Kingdom covering pharmaceutical products is derived from EU directives and regulations, Brexit could materially impact the future regulatory requirements for product candidates and products in the United Kingdom as there is now potential for the UK regulations to diverge from the EU regulations. In the meantime, the Medicines and Healthcare products Regulatory Agency ("MHRA"), the medicines and medical devices regulator in the United Kingdom, has published detailed guidance for industry and organizations to follow as of January 1, 2021, which is updated as necessary. A number of new marketing authorization routes have been introduced post-Brexit under the UK Human Medicines Regulations 2012 (SI 2012/1916) to allow for quick recognition of products that are approved in the EU and to allow greater flexibility in the UK procedures (such as a "rolling review" that permits the submission of an application in modules). As of January 1, 2024, the MHRA is applying its new International Reliance Procedure to medicines approved in other jurisdictions (including by the FDA and EMA) that meet certain criteria to undergo a fast-tracked MHRA review to obtain and/or update a marketing authorization in the UK. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, may force us to restrict or delay efforts to seek regulatory approval in the United Kingdom for our product candidates, which could harm our business.

Negative public opinion and increased regulatory scrutiny of genetic research and therapies involving genome editing may damage public perception of our product candidates generated through genome editing or adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

The CRISPR chRDNA genome-editing technologies that we use are novel, and public perception may be influenced by claims that genome editing is unsafe, and therapeutic products generated through genome editing may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians specializing in our targeted diseases prescribing our product candidates, if approved for marketing, as treatments in lieu of, or in addition to, existing, more familiar treatments for which greater clinical data may be available. Any increase in negative perceptions of genome editing may result in fewer physicians prescribing our treatments or may reduce the willingness of patients to accept our products. In addition, given the nature of genome-edited and CAR-T and CAR-NK cell therapies in general, governments may place import, export, or other restrictions in order to retain control or limit the use of such technologies. Increased negative public opinion or more restrictive government regulations, either in the United States or internationally, could have a negative effect on our business or financial condition and may delay or impair the commercialization of our product candidates or demand for such products.

In particular, genome-editing technology is subject to public debate and heightened regulatory scrutiny due to ethical concerns relating to the potential application of genome-editing technology to human embryos or the human germline. We do not apply genome-editing technologies to human embryos or the human germline. In April 2016, a group of scientists reported on their attempts to edit the genome of human embryos to modify the gene for hemoglobin beta. This is the gene in which a mutation occurs in patients with the inherited blood disorder beta thalassemia. Although this research was purposefully conducted in embryos that were not viable, the work prompted calls for a moratorium or other types of restrictions on genome editing of human eggs, sperm, and embryos. Additionally, in November 2018, a researcher at the

Southern University of Science and Technology in Shenzhen, China, reportedly claimed they had created the first human genome-edited babies, which was subsequently confirmed by Chinese authorities and was negatively received by the public, in particular by those in the scientific community. In the wake of the claim, the World Health Organization established a new advisory committee to create global governance and oversight standards for human genome editing. The Alliance for Regenerative Medicine in Washington, D.C., of which we are a member, has called for a voluntary moratorium on the use of genome-editing technologies, including CRISPR, in research that involves altering human embryos or human germline cells and has also released a bioethical framework of principles for the use of genome editing in therapeutic applications endorsed by a number of companies that use genome-editing technologies. Similarly, the NIH has announced that it would not fund any use of genome-editing technologies in human embryos, noting that there are multiple existing legislative and regulatory prohibitions against such work, including the Dickey-Wicker Amendment, which prohibits the use of appropriated funds for the creation of human embryos for research purposes or for research in which human embryos are destroyed.

Although we do not use our CRISPR chRDNA genome-editing technologies to edit human embryos or the human germline, such public debate about the use of genome-editing technologies in human embryos and heightened regulatory scrutiny could prevent or delay our development of our product candidates and, if approved, the market acceptance of our products. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition. Adverse events in our clinical trials or those of our competitors or of academic researchers utilizing genome-editing technologies, even if not ultimately attributable to product candidates we may identify and develop, and the resulting publicity, could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our product candidates, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates.

We currently have no marketing and sales organization and as a company have no experience in marketing products. If we are unable to establish marketing and sales capabilities or enter into agreements with third parties to market and sell our product candidates, we may not be able to generate product revenue.

To achieve commercial success for any approved product for which we retain sales and marketing responsibilities, we must develop and build a sales and marketing team or make arrangements with third parties to perform these services. There are risks involved with both establishing our own sales and marketing capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force is expensive and time consuming and could delay our product launch. We will have to compete with other pharmaceutical and biotechnology companies to recruit, hire, train, and retain marketing and sales personnel. If the commercial launch of our product for which we have recruited a sales force and established marketing capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses, which may be costly and our investment will be lost if we cannot retain or reposition our sales and marketing personnel.

Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit, hire, train, and retain adequate numbers of effective sales, marketing, customer service, medical affairs, and other support personnel;
- our inability to equip sales personnel with effective materials, including sales literature, to help them educate physicians and other healthcare providers regarding our product candidates and their approved indications;
- our inability to effectively manage a geographically dispersed sales and marketing team;
- the inability of medical affairs personnel to negotiate arrangements for reimbursement and other acceptance by payors;
- the inability to price our products at a sufficient price point to ensure an adequate and attractive level of profitability; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

If we are unable or decide not to establish internal sales, marketing, and distribution capabilities, we will need to enter into arrangements with third parties to perform sales, marketing, and distribution services. In such cases, our product revenue or the profitability to us from these revenue streams is likely to be lower than if we were to market and sell any product candidates that we develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to sell and market our product candidates or may be unable to do so on terms that are favorable to us. We

likely will have little control over those third parties and they may fail to devote the necessary resources and attention to sell and market our product candidates effectively. If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we may not be successful in commercializing our product candidates, and our business, financial condition, results of operations, and prospects will be materially adversely affected.

Our products may not gain market acceptance among physicians, patients, hospitals, cancer treatment centers, and others in the medical community, which could significantly harm our business, financial condition, results of operations, and prospects.

The use of CAR-T and CAR-NK cells as potential cancer treatments is a recent development and may not become broadly accepted by physicians, patients, hospitals, cancer treatment centers, and others in the medical community. Ethical, social, and legal concerns about genome editing could result in the development of additional regulations restricting or prohibiting our products. Even with the requisite approvals from the FDA and other regulatory authorities internationally, the commercial success of our product candidates will depend, in significant part, on the acceptance of physicians, patients, and healthcare payors of products generated through genome editing in general, and our allogeneic CAR-T and CAR-NK cell therapy product candidates in particular, as medically necessary, cost-effective, safe, and effective therapies. We expect physicians in the large bone marrow transplant centers to be particularly important to the market acceptance of our CB-010, CB-011, and CB-012 product candidates and we may not be able to adequately educate them on the benefits and risks associated with the use of our product candidates to address concerns and foster acceptance, for many reasons. For example, certain of the product candidates that we may develop target a cell surface marker that may be present on cancer cells as well as non-cancerous cells. It is possible that our product candidates may kill these non-cancerous cells, which may result in unacceptable side effects, including death.

Additional factors will influence whether our product candidates are accepted in the market, including:
the clinical indications for which our product candidates are approved;

- physicians, hospitals, cancer treatment centers, and patients considering our product candidates as safe and effective treatments;
- the potential and perceived advantages of our product candidates over alternative treatments;
- the prevalence, identification, or severity of any side effects;
- product labeling or product insert requirements of the FDA or other regulatory authorities, including limitations or warnings contained in the product labeling;
- the timing of market introduction of our product candidates as well as competitive products;
- the cost of treatment of our product candidates in relation to alternative treatments;
- the availability of coverage and adequate reimbursement by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket for our product candidates in the absence of coverage;
- relative convenience and ease of administration, including as compared to alternative treatments and competitive therapies;
- the effectiveness of our sales and marketing efforts; and
- potential product liability claims.

If our product candidates are approved but fail to achieve market acceptance among physicians, patients, hospitals, cancer treatment centers, or others in the medical community, we will not be able to generate significant revenue. Even if our products achieve market acceptance, we may not be able to maintain that market acceptance over time if new cell therapy products, genome-editing technologies, or other therapeutic approaches are introduced that are more favorably received than our products, are more cost effective, or render our products obsolete.

The market opportunities for our product candidates may be smaller than we currently believe and limited to those patients who are ineligible for or have failed prior treatment, which may adversely affect our business. Because the

target patient populations of our product candidates are small, we must be able to successfully identify patients and capture a significant market share to achieve profitability and growth.

Our projections of both the number of patients who have the cancers we are targeting, as well as the subset of patients with these cancers in a position to receive second or later lines of therapy and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. New studies may change the estimated incidence or prevalence of these cancers. The number of eligible patients may turn out to be lower than we expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. Given the small number of patients who have the eligibility criteria and diseases that we are or will be targeting, it is critical to our ability to become profitable that we successfully identify such patients. The effort to identify patients with diseases we seek to treat is in early stages, and we cannot accurately predict the number of patients for whom treatment might be possible. Additionally, the potentially addressable patient population for each of our product candidates may be limited or may not be amenable to treatment with our product candidates, and new patients may become increasingly difficult to identify or gain access to, which would adversely affect our business, financial condition, results of operations, and prospects. Even if we obtain significant market share for our product candidates, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications.

Even if we are able to commercialize our product candidates, such products may be subject to unfavorable pricing regulations, third-party reimbursement practices, or healthcare reform initiatives, which could harm our business.

The regulations that govern marketing approvals, pricing, and reimbursement for new biologic products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some non-U.S. markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial marketing approval is granted. As a result, we might obtain marketing approval for our product candidates in a particular country, but then be subject to price regulations that delay our commercial launch of such product candidates, possibly for lengthy time periods, and such delays would negatively impact the revenues we are able to generate from the sale of our product candidates in that country. Pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we may develop obtain marketing approval.

Because our current product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue from our product candidates. Significant uncertainty exists as to the coverage and reimbursement status of any of our products for which we obtain regulatory approval. Additionally, reimbursement coverage may be more limited than the indications for which our products are approved. The marketability of our products may suffer if government and other third-party payors fail to provide coverage and adequate reimbursement. Furthermore, coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more of our product candidates for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Moreover, eligibility for reimbursement does not imply that our product candidates will be paid for in all cases or at a rate that will cover our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new products, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of our product candidate and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products, and may be incorporated into existing payments for other services. Net prices for our product candidates may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where our product candidates may be sold at lower prices than in the United States.

Third-party payors, whether domestic or foreign, governmental or commercial, are developing increasingly sophisticated methods of controlling healthcare costs. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to healthcare systems that could impact our ability to sell our product candidates, if approved, profitably. There have been, and likely will continue to be, legislative and regulatory proposals at the federal and state levels directed at broadening the availability of, and containing or lowering the cost of, healthcare. The implementation of cost containment measures that third-party payors and healthcare providers are instituting and any other healthcare reforms may prevent us from being able to generate, or may reduce, our revenues from the sale of our product candidates, if approved, and our product candidates may not be profitable. Such reforms could have an adverse effect on anticipated revenue from product candidates for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates. Even if our product candidates are successful in clinical trials

and receive marketing approval, we cannot provide any assurances that we will be able to obtain and maintain third-party payor coverage or adequate reimbursement for our product candidates in whole or in part.

Enacted and future healthcare legislation may increase the difficulty and cost for us to obtain approval of and commercialize our product candidates and could adversely affect our business.

The Affordable Care Act and Inflation Reduction Act brought significant changes to the way healthcare is financed by both the government and private insurers, and significantly impacted the U.S. pharmaceutical industry, including expanding the list of covered entities eligible to participate in the 340B drug pricing program and establishing a new Medicare Part D coverage gap discount program. We expect that these and other healthcare reform measures in the future, may result in more rigorous coverage criteria and lower reimbursement, and in addition, exert downward pressure on the price that we receive for any approved product. Any reduction in reimbursement from Medicare or other government-funded programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may hinder us in generating revenue, attaining profitability, or commercializing our cell therapy products once, and if, marketing approval is obtained.

In the EU, coverage and reimbursement status of any product candidates for which we obtain regulatory approval are provided for by the national laws of EU member states. The requirements may differ across the EU member states. In markets outside the United States and the EU, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings or other price controls on specific products and therapies.

We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative action in the United States, the EU, or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or those third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that we may have obtained and we may not achieve or sustain profitability.

We face significant competition from other biotechnology and pharmaceutical companies, which may result in other companies developing or commercializing products before, or more successfully than, we do, thus rendering our product candidates non-competitive or reducing the size of the market for our product candidates. Our operating results will suffer if we fail to compete effectively.

The biopharmaceutical industry, and the genome-editing, cell therapy, and immuno-oncology industries specifically, is characterized by intense competition and rapid innovation. Our potential competitors include major multi-national pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, and universities and other research institutions. Many of our competitors have substantially greater financial, technical, and other resources, such as larger research and development staffs, established manufacturing capabilities and facilities, and experienced marketing organizations with well-established sales forces. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large, established companies that have greater resources. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated on our competitors. Competition may increase further as a result of advances in the commercial applicability of genome editing or other new technologies and greater availability of capital for investment in these industries. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient enrollment for participation in clinical trials, as well as in acquiring technologies complementary to, or necessary for, our development programs. In addition, due to the intense research and development taking place in the genome-editing field, including by us and our competitors, the intellectual property landscape is in flux and highly competitive. There may be significant intellectual property-related litigation and proceedings relating to our owned and in-licensed, and other third-party, intellectual property rights in the future. Our commercial opportunities could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient to administer, have broader acceptance and higher rates of reimbursement by third-party payors, or are less expensive than any product candidates that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, genome-editing technologies developed by our competitors may render our product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we may develop against competitor products. The key competitive factors affecting the success of our product candidates are likely to be their efficacy, safety, and availability of reimbursement.

Our focus is on the development of cell therapies using our chRDNA genome-editing technology. We are aware of several companies focused on developing therapies for various indications using CRISPR-Cas9 and/or CRISPR-Cas12a genome-editing technology including CRISPR Therapeutics AG, Editas Medicine, Inc., and Intellia. In addition, several academic groups have developed new genome-editing technologies based on CRISPR-Cas9, such as base editing and prime editing, as well as alternative CRISPR systems, which may have utility in therapeutic development. We believe companies such as Beam Therapeutics Inc., Metagenomi Technologies, LLC, Prime Medicine, Inc., and Scribe Therapeutics, Inc. are developing alternative CRISPR systems. Multiple academic labs and companies have also published on other CRISPR-associated nuclease variants that can edit human DNA.

There are also companies developing therapies using non-CRISPR genome-editing technologies, such as transcription activator-like effector nucleases, meganucleases, and zinc finger nucleases. These companies include Allogene Therapeutics, Inc., Cellectis S.A., Precision BioSciences, Inc., and Sangamo Therapeutics. In addition to competition from other genome-edited therapies or gene or cell therapies, any product we may develop may also face competition from other types of therapies, such as small molecule, antibody, or protein therapies.

Our allogeneic CAR-T and CAR-NK cell therapy product candidates face significant competition from multiple companies, including Allogene Therapeutics, Inc., Adicet Bio, Inc., Atara Biotherapeutics, Inc., Cellectis S.A., Celyad Oncology SA, CRISPR Therapeutics AG, Fate Therapeutics, Inc., Imugene Limited, Legend Biotech Corporation, Poseida Therapeutics, Inc., Precision BioSciences, and Sangamo Therapeutics. There are over 170 preclinical- and clinical-stage autologous and allogeneic anti-CD19 CAR-T programs, some of which will be competitive with our CB-010 product candidate, and over 60 preclinical- and clinical-stage autologous and allogeneic anti-BCMA CAR-T programs, some of which will be competitive with our CB-011 product candidate. Additionally, other companies are developing allogeneic CAR-T cell therapies for AML.

To become and remain profitable, we must develop and eventually commercialize product candidates with significant market potential, which will require us to be successful in a range of challenging activities. These activities may include completing preclinical studies and clinical trials of our product candidates; obtaining marketing and reimbursement approval for these product candidates; manufacturing, marketing, and selling those products that are approved; and satisfying any post-marketing requirements. We may never succeed in any or all these activities and, even if we do, we may never generate revenues that are significant enough to achieve profitability. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the price of our common stock and could impair our ability to raise capital, maintain our research and development efforts, expand our business, or continue our operations. A decline in the price of our common stock also could cause stockholders to lose all or part of their investments.

Our business operations and current and future relationships with clinical site investigators, healthcare professionals, consultants, third-party payors, patient organizations, and customers will be subject to applicable healthcare regulatory laws, which could expose us to penalties.

Our business operations and current and future arrangements with clinical site investigators, healthcare professionals, consultants, third-party payors, patient organizations, and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations. These laws may constrain the business or financial arrangements and relationships through which we conduct our operations, including how we market, sell, and distribute our product candidates, if approved. Such laws include, but are not limited to, the U.S. Anti-Kickback Statute, U.S. civil and criminal false claims laws, the U.S. federal Beneficiary Inducement Statute, HIPAA, and state and local laws and regulations. Some of these laws may apply differently to, and may have different requirements for, and effects on, our business, rendering compliance complex and possibly burdensome. We cannot predict how future changes to these laws may impact our business.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices, including our relationships with physicians and other healthcare providers, may not comply with current or future statutes, regulations, agency guidance, or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal, and administrative penalties; damages; fines; exclusion from government-funded healthcare programs, such as Medicare and Medicaid or similar programs in other jurisdictions; integrity oversight and reporting obligations to resolve allegations of non-compliance; disgorgement; individual imprisonment; contractual damages; reputational harm; diminished profits; and the curtailment or restructuring of our operations. If any of the physicians or other providers or

entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil, or administrative sanctions, including exclusions from government-funded healthcare programs and imprisonment, which could affect our ability to operate our business. Furthermore, defending against any these actions can be costly, time-consuming, and may require significant personnel resources. Therefore, even if we are successful in defending against any actions that may be brought against us, our business may be impaired.

Our business activities will be subject to U.S. export control licensing requirements, as well as other U.S. and foreign trade regulations, sanctions laws, anti-corruption laws, and anti-money laundering laws and regulations including the Foreign Corrupt Practices Act, which could expose us to penalties.

We develop product candidates that may be subject to U.S. export control licensing requirements and foreign investment regulations. Export licensing policies vary, and we may be unable to collaborate with certain countries or, if our product candidates receive regulatory approval, make sales to certain customers as a result of applicable license requirements. We also may incur increased compliance program costs in connection with U.S. export controls, and the availability of future investments from certain countries may be limited as a result of the controlled nature of our product candidates.

If we expand our business internationally or collaborate globally, we will be required to make investments in compliance programs related to U.S. international trade laws, including the FCPA and similar anti-bribery or anti-corruption laws, regulations, and rules of other countries in which we may choose to operate. Anti-corruption laws are interpreted broadly.

Our business is heavily regulated and therefore involves significant interaction with public officials, including, potentially in the future, officials of non-U.S. governments. Additionally, in many other countries, the healthcare providers who prescribe pharmaceuticals are employed by their government, and the purchasers of pharmaceuticals are government entities; therefore, if our product candidates receive regulatory approval, our dealings with these prescribers and purchasers will be subject to regulation under the FCPA. We may engage third parties to sell our product candidates outside the United States if we receive regulatory approval in such jurisdictions for our product candidates. We may also have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. The SEC and the DOJ have increased their FCPA enforcement activities with respect to biotechnology and pharmaceutical companies. For these reasons, we may be required to expend resources related to training and compliance under FCPA and other anti-corruption laws. There is no certainty that all our employees, suppliers, CMOs, CROs, or other third parties providing services to us will comply with all applicable laws and regulations, particularly given the high level of complexity of these laws. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of these activities.

If we have international activities in the future, we may be required to invest in compliance programs and resources related to U.S. import and export regulations, anti-money laundering laws, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls.

Violations of these international trade laws and regulations could result in fines; criminal sanctions against us, our management, or other employees; the closing down of facilities, including those of our suppliers and CMOs; requirements to obtain export licenses; cessation of business activities in sanctioned countries; implementation of compliance programs; and prohibitions on the conduct of our business. Any such violations could include prohibitions on our ability to seek regulatory approval for our product candidates and, if such approval is received, to sell our products in one or more jurisdictions. This could materially damage our reputation, our ability to attract and retain employees, and our business, financial condition, results of operations, and prospects.

We face potential liability related to the privacy of health information we may obtain from the patients in our clinical trials if we fail to comply with privacy laws.

Most healthcare providers are subject to privacy and security regulations promulgated under HIPAA, as amended by HITECH. We are not currently classified as a covered entity or business associate under HIPAA and thus are not subject to its requirements or penalties. However, any person may be prosecuted under HIPAA's criminal provisions either directly or under aiding-and-abetting or conspiracy principles. Consequently, depending on the facts and circumstances, we could face substantial criminal penalties if we knowingly receive individually identifiable health information from a HIPAA-covered healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information. In addition, if we receive sensitive personally identifiable information, including health information, we may be subject to state laws requiring notification of affected individuals and state

regulators if a breach of personal information occurs, which is a broader class of information than the health information protected by HIPAA.

We cannot assure you that we, our CROs, our clinical trial sites, and our clinical trial principal investigators with access to personally identifiable and other sensitive or confidential information relating to the patients in our clinical trials will not breach contractual obligations, or that we or they will not experience data security breaches or attempts thereof. This could have a corresponding effect on our business, including putting us in breach of our obligations under privacy laws and regulations as discussed above, which could in turn adversely affect our business, financial condition, results of operations, and prospects. We cannot assure you that our contractual measures and our own privacy and security-related safeguards will protect us from the risks associated with the third-party processing, storage, and transmission of such information.

Compliance with global privacy and data security requirements could result in additional costs and liabilities to us or inhibit our ability to collect and process data globally, and the failure to comply with such requirements could subject us to significant fines and penalties, which could have a material adverse effect on our business, financial condition, results of operations, or prospects.

The regulatory framework for the collection, use, safeguarding, sharing, transfer, and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Globally, many jurisdictions have established their own data security and privacy frameworks. In the United States, there are a broad variety of data protection laws that are either currently in place or under way and a wide range of enforcement agencies at both the state and federal levels have the authority to review companies for privacy and data security concerns based on general consumer protection laws. The Federal Trade Commission ("FTC"), and state attorneys general have been aggressive in reviewing privacy and data security protections for consumers. New laws also are being considered at both the state and federal levels. For example, the CCPA, which went into effect on January 1, 2020, provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Many other states are considering similar legislation. A broad range of legislative measures also have been introduced at the federal level. There also is the threat of consumer class actions related to these laws and the overall protection of personal data.

Additionally, the CCPA was amended by the California Privacy Rights Act ("CPRA"), which significantly amends the CCPA and imposes additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations, which could result in increased privacy and information security enforcement. The majority of the provisions went into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Similar laws have passed in, or are being considered by, other states. The enactment of such laws in other states could result in potentially conflicting requirements, which would make compliance challenging and costly.

The FTC and many state attorneys general continue to enforce federal and state consumer protection laws against companies for online collection, use, dissemination and security practices that appear to be unfair or deceptive. For example, according to the FTC, failing to take appropriate steps to keep consumers' personal information secure can constitute unfair acts or practices in or affecting commerce in violation of Section 5(a) of the Federal Trade Commission Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. We may also be subject to new state laws governing the privacy of consumer health data, including information concerning individual health conditions and treatment.

The data privacy laws in the EU have also been significantly reformed. The collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the EU, including personal health data, is subject to the General Data Protection Regulation, (EU) 2016/679 (the "GDPR"). The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR has expanded the definition of personal data to include coded data and requiring changes to informed consent practices and more detailed notices for clinical trial patients and investigators. In addition, the GDPR also imposes strict rules on the transfer of personal data to countries outside the EU, including the United States and, as a result, increases the scrutiny that clinical trial sites located in the European Economic Area should apply to transfers of personal data from such sites to countries that are considered to lack an adequate level of data protection, such as the United States. The GDPR also permits

data protection authorities to require destruction of improperly gathered or used personal information or impose substantial fines for violations of the GDPR, which can be up to 4% of global revenues or €20 million, whichever is greater, and it also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR provides that EU member states may make their own additional laws and regulations limiting the processing of personal data, including genetic, biometric, or health data.

Furthermore, since the United Kingdom is no longer part of the EU, its data protection regulatory regime will be independent of the EU. From January 1, 2021, companies have had to comply with the GDPR and also the United Kingdom GDPR ("UK GDPR"), which, together with the amended United Kingdom Data Protection Act 2018, retains the GDPR in UK national law. The relationship between the United Kingdom and the EU in relation to certain aspects of data protection law remains unclear. In addition, the longer term economic, legal, political, regulatory, and social framework to be put in place between the United Kingdom and the EU has had, and may continue to have, a material and adverse effect on global economic conditions and the stability of global financial markets and may significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Any of these factors could depress economic activity and restrict our access to capital, which could materially and adversely affect our business, financial condition, and results of operations.

Risks Relating to Our Intellectual Property

If we do not possess the necessary intellectual property rights covering our CRISPR chRDNA genome-editing technologies, our product candidates, and other proprietary technologies, we may not be able to block competitors or to compete effectively in the market.

Our industry is subject to rapid technological change and our success depends in large part on our ability to obtain and maintain intellectual property protection in the United States and other jurisdictions with respect to our CRISPR chRDNA platform technologies and product candidates. We rely upon a combination of patents, owned by us or in-licensed from third parties, and trade secrets to protect our technology and product candidates. We seek to protect our intellectual property by filing patent applications in the United States and in other jurisdictions related to our genome-editing technologies and product candidates that are important to our business. We also rely on know-how and continuing technological innovation to develop and maintain our competitive position. If we are unable to obtain or maintain intellectual property protection with respect to our CRISPR chRDNA genome-editing platform technologies and product candidates, our business, financial condition, results of operations, and prospects will be materially harmed.

The strength of patents in the biotechnology and pharmaceutical fields generally, and the genome-editing field in particular, involves complex legal and scientific questions and can be uncertain. For example, the scope of patent protection that will be available to us in the United States is uncertain. Changes in either the patent laws or their interpretation may diminish our ability to protect our intellectual property; obtain, maintain, defend, and enforce our intellectual property rights; and, more generally, could affect the value of our intellectual property or narrow the scope of our owned or in-licensed patents. With respect to both owned and in-licensed intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will grant as patents, whether the claims of any granted patents will provide sufficient protection, or whether, if these patents are challenged by our competitors, they will be found to be invalid, unenforceable, or not infringed.

The patent prosecution process is expensive, time-consuming, and complex, and we or our licensors may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patents at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development in time to obtain patent protection before public disclosures are made. Although we may enter into non-disclosure or confidentiality agreements with parties who may have access to patentable aspects of our research and development, such as our employees, collaborators, CMOs, suppliers, consultants, CROs, clinical trial site investigators and personnel, and other third parties, any one of these parties may breach their confidentiality agreements and disclose innovations before we can file a patent application, thereby jeopardizing our ability to seek patent protection.

The USPTO requires compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process. The ultimate outcome of our pending patent applications is uncertain and the coverage claimed in a patent application can be significantly reduced before the patent is granted. Even as our patent applications, or those of our licensors, currently or in the future, grant as patents, they may not grant in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, dissuade companies from collaborating with us, or otherwise provide us with any competitive advantage. Periodic maintenance fees on granted patents are also required to be paid over the lifetime of the patent. Although an inadvertent lapse can, in many

cases, be cured by payment of a late fee or by other means in accordance with applicable laws and regulations, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in the loss of patent rights. Noncompliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, nonpayment of fees, failure to properly legalize and submit formal documents, and the like. If we experience noncompliance events that cannot be corrected and we lose our patent rights, competitors could enter the market, which would have a material adverse effect on our business.

Composition of matter patents for biological and pharmaceutical products, such as CAR-based cell therapy products, often provide a strong form of intellectual property protection as such patents provide protection without specifying any particular method of use or manufacture. Methods of use patents can protect particular applications of a product or the manufacturing of a product; however, such method claims do not prevent a competitor from using a product that is identical to our product for an indication that is outside the scope of the patented method of use or making a product that is identical to our product using a different method of manufacturing. Our allogeneic CAR-T and CAR-NK cell therapy product candidates do not contain our chRDNA genome-editing technology; rather, our chRDNA guides are used in the manufacturing of our CAR-T and CAR-NK products. It is virtually impossible to determine whether a competitor has infringed our chRDNA patents in making their products. Thus, even if we obtain patent protection on certain aspects of our technologies, such protection may not be enough to block our competitors from entering the market.

Third-party claims of intellectual property infringement may prevent or delay our ability to commercialize our product candidates.

The fields of genome editing and CAR-T and CAR-NK cell therapies are relatively new. No genome-edited products have been commercialized and there is ongoing patent litigation in the autologous CAR-T cell therapy space. Due to the widespread research and development that is taking place in these fields, including by us and our competitors, the intellectual property landscape is in flux and may remain uncertain for the foreseeable future. There may be significant litigation and administrative proceedings that could affect our genome-editing technologies and product candidates.

Our commercial success depends upon our ability to develop, manufacture, market, and sell product candidates that we may develop or license without infringing, misappropriating, or otherwise violating the intellectual property rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. Numerous U.S. and foreign granted patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. As industry, government, academia, and other biotechnology and pharmaceutical research expands and more patents are granted, the risk increases that our genome-editing technologies or product candidates may give rise to claims of infringement of the patent rights of others. We cannot guarantee that our genome-editing technologies, current and future product candidates, or the use or manufacture of such product candidates does not currently or will not in the future infringe third-party patents. There may be third-party patents with claims to compositions, methods of manufacture, or methods of use or treatment that could cover our current or future product candidates. It is possible that we may fail to identify relevant third-party patents or applications. Furthermore, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Thus, we cannot be certain that we were the first to file any patent application related to our genome-editing technologies or product candidates. Furthermore, patent rights are granted jurisdiction-by-jurisdiction, and our freedom to practice certain genome-editing technologies, including our ability to research, develop, and commercialize our product candidates, may differ by country.

Numerous third-party U.S. and foreign granted patents and pending patent applications exist in the fields of CRISPR genome editing as well as the field of immuno-oncology, including those relating to CAR constructs and CAR-T and CAR-NK cell therapy compositions and methods of use. Our CB-010 product candidate uses Cas9 chRDNAs to insert the CD19-specific CAR into the T cell genome and for an additional edit. Numerous parties have intellectual property relating to RNA-guided Cas9 genome editing. See Risk Factors - *"Our ability to continue to receive licensing revenue and to enter into new licensing arrangements related to the foundational CRISPR-Cas9 intellectual property will be substantially impaired if such intellectual property is limited by administrative patent proceedings or other patent challenges,"* in Item 1A of this Annual Report on Form 10-K. Our CB-011 product candidate and our CB-012 product candidate both use Cas12a chRDNAs to insert the CAR into the T cell genome and to make additional edits. We are aware of certain third-party patents assigned to the Broad Institute, Massachusetts Institute of Technology, and the President and Fellows of Harvard University relating to CRISPR-Cas12a genome-editing systems (Cas12a was then referred to as Cpf1), which will expire in late 2035 assuming no PTE or PTA. Additionally, we are aware of third-party patents assigned to the U.S. government relating to anti-BCMA CARs as well as nucleic acids encoding such CARs, vectors comprising these

nucleic acids, and host cells expressing such CARs, which will expire in 2033 assuming no PTE or PTA. We are also aware of several third-party patents relating to various CAR compositions, methods of use, and components, including specific co-stimulatory regions. There is ongoing patent litigation over various third-party CAR patents, and unexpired patents that survive that litigation could be asserted against us.

Third parties may assert that our product candidates infringe their patents, including those listed above. Under U.S. patent laws, conducting clinical trials and seeking regulatory approval in the United States for therapeutic products are generally not considered an act of infringement, and similar exemptions are present in other countries. Nevertheless, third parties may allege that the act of filing our BLA or conducting clinical trials is outside of the safe harbor provision for activities reasonably related to the development and submission of information to the FDA for regulatory approval, and third parties may, upon our regulatory filing, assert infringement claims based on existing patents or patents that may be granted prior to our BLA filing, regardless of the merit of such claims. Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, ownership, or priority. Patents in the United States by law enjoy a presumption of validity that can be rebutted only with evidence that is "clear and convincing," a heightened standard of proof. In order to successfully challenge the validity of any U.S. patent in federal court, we would need to overcome this presumption of validity, and there can be no assurance that a court of competent jurisdiction would invalidate the patent. A court of competent jurisdiction could hold that these third-party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we may develop, including CB-010, CB-011, and CB-012, as well as any other product candidates or technologies covered by the asserted third-party patents.

If any third-party patents were held by a court of competent jurisdiction to cover our genome-editing technology used in the manufacturing of our product candidates or any product candidate itself or its indication, the holders of those patents may be able to block our ability to commercialize the product candidate unless and until we obtained a license under the applicable patents, or the patents expire, or are held to be not infringed, unpatentable, invalid, or unenforceable. We may not be able to obtain a license to the blocking patents, or the terms of the license may not be commercially viable. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same intellectual property licensed to us, and it could require us to make substantial upfront, milestone, and royalty payments. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, or at all, our ability to commercialize our product candidates may be blocked or delayed, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We could also be forced, including by court order, to cease manufacturing and commercializing any infringing product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed the third-party patent. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of our management time and resources from our business.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting, maintaining, enforcing, and defending patents on our genome-editing technologies and product candidates in countries outside the United States is expensive. Prosecution of patent applications is often a longer process and patents may grant at a later date, and with a shorter term, than in the United States. The requirements for patentability differ in certain jurisdictions and countries. Additionally, the patent laws of some countries do not afford intellectual property protection to the same extent as the laws of the United States. For example, unlike patent law in the United States, patent law in most European countries and many other jurisdictions precludes the patentability of methods of treatment and diagnosis of the human body. Other countries may impose substantial restrictions on the scope of claims, limiting patent protection to specifically disclosed embodiments. Consequently, we may not be able to prevent third parties from practicing our inventions in major markets outside the United States, or from selling or importing products into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and may export otherwise infringing products to jurisdictions where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent such competition. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in intellectual property laws in various jurisdictions worldwide.

Many companies have encountered significant problems in enforcing and defending intellectual property rights in various jurisdictions globally. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our intellectual property rights generally. Proceedings to enforce our intellectual property rights in various jurisdictions globally could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly, could put related patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we file, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage against competitors.

Many jurisdictions have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties if they are not practicing the patented technology. In addition, some countries limit the enforceability of patents against third parties, including government agencies. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors are forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected. Patent protection must be maintained on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Accordingly, we may choose not to seek patent protection in certain jurisdictions or countries, and we will not have the benefit of patent protection in such jurisdictions or countries.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We may in the future be subject to claims that former employees, consultants, or other third parties have an interest in our patents or other intellectual property as an inventor, co-inventor, or owner of trade secrets. Although it is our policy to require our employees and consultants who may be involved in the conception or development of intellectual property to execute agreements assigning that intellectual property to us, we may be unsuccessful in executing such an agreement with each party who conceives or develops intellectual property that we regard as our own or such party may breach the assignment agreement. We may have disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to obtain ownership or to defend against claims challenging inventorship. If we or our licensors fail in that litigation, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property. Such an outcome could have a material adverse effect on our business. Even if we or our licensors are successful in defending against those claims, litigation could result in substantial costs and be a distraction to our management and other employees, and the claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

The terms of our patents may not be sufficient to effectively protect our products and business, and the expiration of our patents may subject us to increased competition.

Although various extensions may be available, the term of a patent, and the protection it affords, is limited. In most countries including the United States, the natural expiration of a patent is generally 20 years after its first effective filing date. Even if patents covering our product candidates are obtained, once the patent term has expired for a product we may be open to competition from biosimilar or generic medications. In addition, although, upon issuance in the United States the term of a patent can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by us during patent prosecution or if terminal disclaimers are filed over other co-owned patents or patent applications to avoid rejections based on obviousness-type double patenting. If we do not have sufficient patent term to protect our products, our business, financial condition, results of operations, and prospects will be adversely affected.

We may not obtain patent term extension for any product candidates we develop.

Depending upon the timing, duration, and specifics of any FDA marketing approval of any product candidates we develop, our U.S. patents may be eligible for limited PTE under the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during clinical trials and the FDA regulatory review process. A PTE cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended, and only a patent with claims covering the approved biologic, a method for its approved indication, or a method for manufacturing it may be extended. However, we may not be

granted an extension because of, for example, failing to exercise due diligence during the clinical phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy the applicable requirements. Moreover, we may not receive PTE or we may receive less time than we requested. If we are unable to obtain PTE or if the term of any such PTE is less than we request, we will be unable to rely on our patent position to forestall the marketing of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed.

Changes to the patent law in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our genome-editing technologies and product candidates.

Patent reform legislation in the United States and other countries could increase the uncertainties around patent protection, costs, and the enforcement or defense of our patents, all of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. For example, the 2011 Leahy-Smith America Invents Act included a number of significant changes to U.S. patent law. Such provisions affect the way patent applications are prosecuted, redefine prior art, and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. In addition, the Leahy-Smith America Invents Act transformed the U.S. patent system from a first-to-invent to a first-to-file system, effective on March 16, 2013. For small companies, such as ours, this means that we must file our patent applications earlier in our development process rather than relying on proving priority of invention and it is now easier and less costly for third parties to attack our patents, all of which could harm our business, financial condition, results of operations, and prospects.

There is uncertainty regarding the patentability of certain inventions in the biotechnology and pharmaceutical areas. Recent decisions by the U.S. Supreme Court have either narrowed the scope of patent protection available in certain circumstances or weakened the rights of patent owners in particular situations. For example, in *Association for Molecular Pathology v. Myriad Genetics, Inc.,* the Supreme Court ruled that a "naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated," and invalidated Myriad Genetics' claims on isolated BRCA1 and BRCA2 genes. To the extent that our claims relate to naturally occurring antibodies or proteins, these may be deemed to be directed to natural products or to lack an inventive concept above and beyond an isolated natural product, and a court may decide the claims are invalid under the *Myriad* decision. Depending on future actions by the U.S. Congress, the U.S. courts, the USPTO, and the relevant law-making bodies, as well as courts and patent offices in other countries, the laws and regulations governing patents could change in unpredictable ways that may weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future, which could have a material adverse effect on our existing patent portfolio and those of our licensors.

In Europe, a new unitary patent system took effect on June 1, 2023, which will significantly impact European patents, including those granted before the introduction of such a system. Under the unitary patent system, European patent applications will have the option, upon grant of a patent, of becoming a Unitary Patent, which will be subject to the jurisdiction of the Unitary Patent Court (the "UPC"). The UPC may present uncertainties for our ability to protect and enforce our patent rights against competitors in Europe. Although this new court was implemented to provide more certainty and efficiency to patent enforcement throughout Europe, it also provides our competitors with a new forum to use to centrally challenge our patents, rather than having to seek invalidity or non-infringement decisions on a country-by-country basis. It will be several years before the scope of patent rights that will be recognized by the UPC, and the strength of patent remedies that will be provided, is known.

We may be involved in lawsuits or other proceedings to enforce or protect our patents, the patents of our licensors, or our other intellectual property rights, which could be expensive, time-consuming, and unsuccessful.

Competitors may infringe our patents or our licensors' patents or challenge the validity of our or our licensors' patent rights. Even if our patents are unchallenged, they may not adequately prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by our patents and patent applications to our product candidates is threatened, it could dissuade companies from collaborating with us to develop, and threaten our or their ability to commercialize, our product candidates.

Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time-consuming and likely to divert significant resources from our core business, including distracting our management and scientific personnel from their normal responsibilities, and generally harm our business. Additionally, a defendant could counterclaim that our patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Thus, suing a third

party for patent infringement puts our patents at risk and we may choose not to take such actions, thus allowing a competitor to infringe our patents. Grounds for a validity challenge in a counterclaim could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Thus, a court may decide that one or more of our patents is not valid or is unenforceable or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put one or more of our pending patent applications at risk of not issuing, all of which could negatively impact our business. Even if we establish infringement in a legal proceeding against a third party, the court may decide not to grant an injunction against further infringing activity by the defendant and may only award money damages, which may or may not be an adequate remedy for us depending on the circumstances. Furthermore, because of the substantial amount of discovery required in connection with U.S. patent litigation, there is a risk that some of our confidential information could be compromised by disclosure during litigation.

Third parties may also raise similar claims of invalidity before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include *inter partes* review, *ex parte* reexamination, and post grant review in the United States, and equivalent proceedings in foreign jurisdictions, including opposition proceedings before the EPO. These proceedings could result in revocation or amendment to our patents, which potentially could result in our patents no longer protecting our genome-editing technologies or our product candidates. A loss of patent protection could have a material adverse impact on our business.

We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources. There can be no assurance that we will have sufficient financial or other resources for such litigation or proceedings, which may continue for several years. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing or misappropriating or successfully challenging our intellectual property rights. In addition, if securities analysts or investors perceive litigation results to be negative, it could have a substantial adverse effect on the price of our common stock. There could be public announcements of the results of litigation or patent challenge hearings, motions, or other interim proceedings or developments, which also could affect the price of our stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. Any of the foregoing could allow third parties to develop and commercialize competing technologies and products and have a material adverse impact on our business, financial condition, results of operations, and prospects.

Our product candidates are biologics, and as such, we may enter into a settlement agreement with a biosimilar manufacturer seeking to market a product highly similar to our product; such a settlement agreement may be reviewed by the Federal Trade Commission and such review could result in a fine or penalty and substantial expense.

The FTC reviews patent settlement agreements between biologics companies and biosimilar manufacturers to evaluate whether these agreements include, among other things, anti-competitive reverse payments that slow or defeat the introduction of lower-priced medicines, including biosimilars. If we are faced with an FTC challenge of a settlement agreement with a biosimilar manufacturer, such challenge could impact how or whether we settle the case and, even if we strongly disagree with the FTC's position, we could face a penalty or fine and substantial expense. Any litigation settlements we enter into with biosimilar manufacturers could also be challenged by third parties adversely affected by the settlement. These kinds of follow-on lawsuits, which may be class action suits, can be expensive and can continue over multiple years. If we were to face lawsuits of this nature, we may not be successful in defeating these claims and we may, therefore, be subject to large payment obligations, which we may not be able to satisfy in whole or in part.

Our rights to develop and commercialize our product candidates are subject to the terms and conditions of our licenses and assignments with third parties. If we fail to comply with our obligations under these agreements, we could lose intellectual property rights and be subject to litigation from our licensors or assignors.

We license, or have taken assignment to, patents related to certain of our product candidates and genome-editing technologies from third parties. These licenses and assignments typically impose obligations on us, including diligence and payment obligations. If we fail to comply with our obligations under these agreements, our licensors and assignors may have the right to terminate our agreements, in which case we would not be able to commercialize any product that is covered by the patent rights at issue. Additionally, we may be subject to litigation for breach of these agreements. Moreover, if disputes over intellectual property that we have licensed, or taken assignment of, prevent or impair our ability

to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the product candidates or technologies covered by such patents, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects. In addition, intellectual property rights that we license in the future may include sublicenses under intellectual property owned by third parties, in some cases through multiple tiers. The actions of our licensors may therefore affect our rights to use our sublicensed intellectual property, even if we are in compliance with all of the obligations under our license agreements. Should our licensors or any of the upstream licensors fail to comply with their obligations under the agreements pursuant to which they obtain the rights that are sublicensed to us, or should those agreements be terminated or amended, our ability to develop and commercialize our product candidates may be materially harmed.

Our CRISPR chRDNA genome-editing patent family was developed under a three-year research collaboration between us and Pioneer, now Corteva Agriscience. Initially, this patent family was owned by Pioneer under the terms of the Pioneer Agreement with Pioneer (then a DuPont company), and Pioneer granted us an exclusive license to the chRDNA patent family in the fields of human and animal therapeutics and research tools as well as a non-exclusive license in certain other fields outside the Pioneer Exclusive Field. Through an amendment to the Pioneer Agreement, dated December 18, 2020, Pioneer assigned the chRDNA patent family to us in exchange for an upfront payment and potential future milestones. As part of this amendment, Pioneer also granted a covenant not to sue for our licensees of our chRDNA technologies under certain other Pioneer intellectual property (to which we already have a license that, in this situation, we cannot sublicense to licensees of our chRDNA technologies in the field of human therapeutics) that might cover our chRDNA genome-editing technology, provided that we make the required payments. Thus, if we do not make such payments, our licensees could be sued by Pioneer, which could result in our licensees suing us for breach of contract.

Additionally, under the Pioneer Agreement, we licensed certain Pioneer background CRISPR-Cas9 intellectual property, particularly a patent family owned by Vilnius University and exclusively licensed to Pioneer, that we have sublicensed to several third parties as part of our CRISPR-Cas9 out-licensing program. Although the Vilnius patent family does not cover our chRDNA genome-editing technologies or product candidates, if we were to materially breach the Pioneer Agreement and not cure the breach, Pioneer could terminate the Pioneer Agreement, which would expose us to possible lawsuits from a number of our sublicensees to the Vilnius University patent family.

For our CB-011 product candidate, an allogeneic anti-BCMA CAR-T cell therapy, we took assignment of an anti-BCMA scFv from ProMab under the ProMab Agreement. Although we own the patent family that covers this scFv and its methods of use, if we materially breach, and do not cure, the ProMab Agreement, ProMab could terminate the ProMab Agreement and we would be required to immediately cease any and all manufacture, sale, offer for sale, use, import, or export of products comprising the anti-BCMA scFv (provided that, if our product is approved for commercial sale, we may sell any remaining existing inventory of such products for a short period of time). If this were to happen prior to regulatory approval, we would not be able to continue the development of CB-011 and, if this were to happen after regulatory approval, we would lose all future revenues from CB-011.

The scFv in our CB-012 product candidate, an allogeneic anti-CLL-1 CAR-T cell therapy, is exclusively licensed to us in this field by MSKCC. To maintain the license, we are required to pay annual license fees and to meet certain diligence milestones within specified periods of time. We may extend these periods by a certain number of months upon payment of additional fees. If we materially breach, and do not cure, the MSKCC Agreement, MSKCC may terminate the MSKCC Agreement, in which case we would not be able to continue the development of CB-012 or any other licensed CLL-1 product candidate.

Thus, we are reliant upon the above licenses to and assignments of certain intellectual property from third parties that is important or necessary to the development of our genome-editing technologies and product candidates. In spite of our best efforts, our licensors or assignors might conclude that we have materially breached our license or assignment agreements, respectively, and might terminate these agreements, thereby removing our ability to develop and commercialize products and technology covered by the agreements. To the extent such third parties fail to meet their obligations under these agreements, which we are not in control of, we may lose the benefits of the agreements. If these agreements are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors could have the freedom to seek regulatory approval of, and to market, products identical to ours. Any of these events could have a material adverse effect on our competitive position, business, financial condition, results of operations, and prospects.

Disputes may arise with the third parties from whom we license or take assignment of our intellectual property rights from for a variety of reasons, including:

- the scope of rights granted under the license or assignment agreement and other interpretation-related issues;

- the extent to which our technology and processes infringe on, or derive from, intellectual property of the licensor that is not subject to the license or assignment agreement and is not covered by a covenant not to sue;
- the sublicensing of rights and the obligations to our licensors associated with sublicensing;
- our diligence obligations under license or assignment agreements and what activities satisfy those diligence obligations; and
- whether payments are due and when.

We may not be successful in obtaining or maintaining necessary rights to any future product candidates that we acquire through acquisitions or in-licenses.

Our future programs may involve additional product candidates that may require the use of intellectual rights held by third parties, and the growth of our business could depend, at least in part, on our ability to acquire or in-license these intellectual property rights. We may be unable to acquire or in-license intellectual property rights from third parties that we identify. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, which would harm our business. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. In that case, we may be required to expend significant time and resources to develop or license other product candidates. We may need to cease development of a future product candidate covered by such third-party intellectual property rights.

The licensing and acquisition of third-party intellectual property rights is a competitive area, and companies that may be more established or have greater resources than we do may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to develop product candidates. More established companies may have a competitive advantage over us due to their size, cash resources, and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates or new genome-editing or other technologies that we may seek to acquire. If we are unable to successfully obtain rights to required third party intellectual property rights, we may not be able to expand our product pipeline, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Our ability to continue to receive licensing revenue and to enter into new licensing arrangements related to the foundational CRISPR-Cas9 intellectual property will be substantially impaired if such intellectual property is limited by administrative patent proceedings or other patent challenges.

We have an exclusive license from UC and Vienna in all fields to the CVC IP, having as inventors Drs. Jennifer A. Doudna, Emmanuelle Charpentier, Martin Jinek, and Krzysztof Chylinski. We have entered into over 25 sublicenses, both exclusive and non-exclusive, to this CRISPR-Cas9 intellectual property in combination with licenses to our own Cas9 intellectual property (and sometimes in combination with a sublicense to the Vilnius Cas9 patent family we licensed from Pioneer) in a variety of fields (e.g., human cell therapy, microbial applications, agriculture, livestock, industrial biotechnology, nutrition and health, research reagents and services, forestry, transgenic animal models, internal research, etc.). We are also required to share with UC/Vienna a percentage of sublicensing revenue we receive including cash and equity. These sublicense agreements are an important source of revenues for us while we are developing our own product candidates. Furthermore, we must reimburse UC/Vienna for the patent prosecution and maintenance costs associated with the CVC IP, which are substantial in light of all the disputes outlined below.

The CVC IP that we have exclusively licensed from UC/Vienna is co-owned with Dr. Charpentier, and Dr. Charpentier has not granted us any rights to the CVC IP, either directly or indirectly. On December 15, 2016, we entered into the IMA with UC, Vienna, Dr. Charpentier, CRISPR Therapeutics AG (the exclusive licensee of Dr. Charpentier in the field of human therapeutics), ERS Genomics Ltd (the exclusive licensee of Dr. Charpentier in all fields outside human therapeutics), and Intellia, our exclusive licensee in a defined field of human therapeutics. Under the IMA, the co-owners provided reciprocal worldwide cross-consents to each of the other co-owners' existing licensees and sublicensees as well as future licensees and sublicensees, with no accounting to the other owners. The IMA includes a number of other commitments and obligations with respect to supporting and managing the CVC IP, including a cost-sharing agreement. In the United States, each co-owner has the freedom to license and exploit the technology. As a result, although our license from UC/Vienna is exclusive, we do not have any rights from Dr. Charpentier and thus our license to the CVC IP from UC/

Vienna is non-exclusive with respect to such co-owned rights. Furthermore, in the United States, each co-owner is required to be joined as a party to any claim or action we may wish to bring to enforce those patent rights. Although we have entered into the IMA, which provides for, among other things, notice of and coordination in the event of third-party infringement of the patent rights within the CVC IP, there can be no assurance that all parties will cooperate in any future infringement. In addition, the parties to the IMA may dispute certain provisions and the resolution of any contract interpretation disagreement could increase what we believe to be our financial obligations to UC/Vienna.

The CVC IP is, and has been, the source of several disputes in the USPTO, the EPO, and other patent offices. At the time the CVC IP was first filed (May 25, 2012), the United States was under a first-to-invent patent system; thus, if two or more patent applications or one or more patents and one or more patent applications claimed the same invention, the USPTO would determine the inventorship. Specifically, the Broad Institute Inc. and Massachusetts Institute of Technology and, in some instances, the President and Fellows of Harvard College (individually and collectively, "Broad"), owns a patent family (having an earliest filing date of December 12, 2012) that includes granted patents in the United States and Europe that claim certain aspects of CRISPR-Cas9 systems to edit DNA in eukaryotic (i.e., plant and animal) cells, including human cells. In January 2016, the Patent Trial and Appeal Board ("PTAB") of the USPTO declared an interference (Interference No. 106,048, or the '048 interference) between one of the then-pending U.S. patent applications (now U.S. Patent No. 10,266,850) included in the CVC IP and 12 granted U.S. patents owned jointly by the Broad to determine which set of inventors invented first and, thus, was entitled to patents on the invention in the United States. The PTAB concluded at the end of the motions phase that the declared interference should be discontinued (and not progress to the priority phase) because the involved claim sets were considered patentably distinct from each other. Following appeal by the CVC group, in September 2018, the U.S. Court of Appeals for the Federal Circuit ("CAFC"), affirmed the PTAB's decision to terminate the interference proceeding without determining which inventors actually invented the use of the CRISPR-Cas9 genome-editing technology in eukaryotic cells. In June 2019, the PTAB declared another interference (Interference No. 106,115, or the '115 interference) between 14 pending U.S. patent applications in the CVC IP and 13 patents and a patent application co-owned by the Broad. The Broad patents include those that were the subject of the '048 interference. In February 2022, the PTAB issued its decision that the Broad inventors were the first to invent the use of CRISPR-Cas9 genome editing in eukaryotic cells; the owners of the CVC IP have appealed this decision to the CAFC.

In addition to the Broad, ToolGen, Inc., MilliporeSigma (a subsidiary of Merck KGaA), and Harvard University, each filed patent applications claiming CRISPR-Cas9-related inventions after the CVC IP was first filed (October 23, 2012 in the case of ToolGen patent family; December 6, 2012 in the case of the MilliporeSigma patent family; and December 17, 2012 in the case of the Harvard University patent family) and have each alleged that they invented one or more of the inventions claimed in the CVC IP before the CVC inventors did. In December 2020, the PTAB declared an interference (Interference No. 106,127, or the '127 interference) between a ToolGen patent application that claims certain aspects of CRISPR-Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same 14 pending U.S. patent applications in the CVC IP that are involved in the appeal of the '115 interference. The motions phase of this interference has concluded and the priority phase suspended until the CAFC appeal is decided. Additionally, the PTAB declared an interference (Interference No. 106,126) at the same time between the same ToolGen patent application and the Broad patents and patent application in the appeal of the '115 interference; the motions phase has concluded and this interference is also suspended until the CAFC appeal is decided. In June 2021, the PTAB declared an interference (Interference No. 106,132 or the '132 interference) between a MilliporeSigma patent application that claims methods for using CRISPR-Cas9 systems to edit DNA in eukaryotic cells, including human cells, and the same 14 pending U.S. applications in the CVC IP that are involved in the '115 and '127 interferences. This interference completed the motions phase and is also suspended until the CAFC appeal is decided. Also in June 2021, the PTAB declared an interference (Interference No. 106,133) between the same MilliporeSigma patent application and the Broad patents and patent applications in the '115 and '126 interferences; the motions phase has concluded and this interference is also suspended until the CAFC appeal is decided. We do not know the impact of a decision by the CAFC in the appeal of the '115 interference on these suspended interferences.

Opposition and appeal proceedings in the EPO are ongoing against patents owned by the Broad, ToolGen, and MilliporeSigma as well as against the CVC IP. Additionally, invalidation trials or appeals thereof of the CVC IP are ongoing in China, India, and Japan. Such proceedings are often lengthy and can lead to the revocation of a patent in its entirety, the maintenance of the patent as granted, or, depending upon the jurisdiction, the maintenance of a patent in amended form. These CVC IP will expire in 2033 without PTA or PTE.

In light of the uncertainty surrounding the CVC IP, certain third parties have negotiated royalty-stacking provisions in their sublicenses with us, whereby they can deduct from what they owe to us a certain percentage of royalties they pay to other parties with CRISPR-Cas9 patents (such as to the Broad). Furthermore, other third parties have adopted a "wait and see" approach and are not entering into license agreements with us or third parties until all of the uncertainty

surrounding inventorship and priority among the groups with CRISPR-Cas9 patents is resolved. If patents in the CVC IP are invalidated, certain of our sublicensees may wish to renegotiate their license agreements with us or may terminate for convenience. If this happens prior to commercialization of our own product candidates, we could lose a source of revenues while still remaining responsible for reimbursing UC for costs of prosecuting and maintaining the remaining CVC IP.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position will be harmed.

In addition to seeking patents for some of our technology and product candidates, we also rely on trade secrets and confidentiality agreements to protect our know-how that is not patentable, processes for which patents are difficult to enforce, and any other elements of our product discovery and development processes that involve confidential know-how, information, or technology that is not covered by patents. Trade secrets and know-how can be difficult to protect.

We seek to protect these trade secrets and other confidential information, in part, by entering into non-disclosure or confidentiality agreements with parties who have access to them, such as our employees, collaborators, CMOs, CROs, clinical trial site personnel and investigators, consultants, and other third parties. We also enter into confidentiality and invention assignment agreements with our employees and our agreements with consultants include invention assignment obligations. We seek to preserve the integrity and confidentiality of our data, know-how, and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. Although we have confidence in these individuals, organizations, and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breaches. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our confidential information will be effective. We cannot guarantee that our trade secrets and other confidential information will not be disclosed or that competitors will not otherwise gain access to our trade secrets.

Despite these efforts, any of these parties may breach agreements and disclose our confidential information, including our trade secrets, and we may not be able to obtain adequate remedies for any breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts both within and outside the United States may be less willing or unwilling to protect confidential information, including trade secrets. If a competitor lawfully obtains or independently develops any of our trade secrets, we will have no right to prevent that competitor from using such information to compete with us, which could harm our competitive position. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we may not be able to establish or maintain a competitive advantage in our markets, which could materially adversely affect our business, operating results, financial condition, and prospects. Additionally, it is possible that our genome-editing technology platform, our trade secrets, and our know-how will over time be disseminated within the industry through the publication of journal articles and the movement of personnel from our company into academia or into other companies that may be our competitors.

Furthermore, others may independently discover our trade secrets or other confidential information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we consider to be confidential, including trade secrets, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position will be materially and adversely harmed.

Intellectual property rights do not necessarily address all potential competitive threats and may not adequately protect our business or permit us to maintain our competitive advantage.

The degree of future protection afforded by our intellectual property rights, whether through patents or trade secrets, is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make, use, and sell cell therapy products that are similar to our product candidates without infringing our intellectual property rights;
- others may independently develop similar or alternative genome-editing technologies without infringing our intellectual property rights;
- we may not develop additional patentable technologies;

- others may misappropriate our trade secrets, or independently develop or acquire our trade secrets lawfully; and
- our patents may have expired, whether or not PTE was granted.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects.

If our trademarks are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

If our trademarks are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected. Our unregistered trademarks may be challenged, infringed, circumvented, declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our unregistered trademarks. Over the long term, if we are unable to successfully register our trademarks and establish name recognition based on our trademarks, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our trademarks, domain names, copyrights, or other intellectual property rights may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our business, financial condition, results of operations, and prospects.

Risks Relating to Our Relationships with Third Parties

We rely on third parties to supply the materials for, and the manufacturing of, our clinical product candidates, and, if such product candidates receive regulatory approval, we may continue our reliance on third parties for manufacturing of our commercial products. Our continued success is subject to the performance of these third parties.

We currently do not have clinical-scale manufacturing capabilities, nor do we have any immediate plans to develop such capabilities; thus, we must rely on third-party CMOs to manufacture clinical supplies for our product candidates. We currently rely on five different CMOs to supply materials to an additional CMO who manufactures the necessary CB-010, CB-011, and CB-012 product candidates for our phase 1 clinical trials. We anticipate that we may need to engage other suppliers and CMOs for our clinical trials with our product candidates.

We receive the CRISPR chRDNA guides used for genome editing from one CMO, the Cas proteins (Cas9 in the case of CB-010 and Cas12a in the case of CB-011 and CB-012) from another CMO, the virus used to insert the CAR into the T cell genome from another CMO located outside the United States, and our healthy donor cells from multiple sources. The virus CMO receives plasmid from another supplier used in the manufacture of the viral material. Another CMO uses all of these materials to manufacture the CAR-T products. Coordination is essential to ensure that the various materials are received by the CMO manufacturing the T cell products in time, and in the correct amounts, for manufacturing runs. The manufactured CAR-T products then undergo a series of release testing. There can be no assurance that we will not experience supply or manufacturing issues in the future; particularly, given our reliance on single-source suppliers, some of which are small companies with limited resources and experience to support clinical, and ultimately commercial, products. We cannot ensure that these suppliers will remain in business or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purposes. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand if we must switch to a new supplier or CMO. The time and effort to qualify a new supplier or CMO, including to meet any regulatory requirements for such qualification, could result in additional costs, diversion of resources, or reduced manufacturing yields, any of which would negatively impact our operating results. Furthermore, we may be unable to enter into agreements with a new supplier on commercially reasonable terms, which could have a material adverse impact on our business, financial condition, results of operations, and prospects.

If our CMOs and suppliers cannot successfully manufacture materials that conform to our specifications and the strict regulatory requirements of the FDA or other regulatory authorities, they will not be able to secure or maintain regulatory approval for their manufacturing facilities. In addition, we have no direct control over the ability of our CMOs and suppliers to maintain adequate quality control, quality assurance, and corresponding maintenance of records and documents, or to hire and retain trained personnel. If the FDA or a foreign regulatory authority inspects these third-party facilities for compliance with regulations for the manufacture and testing of materials or product candidates and, if these

facilities fail inspection and cannot adequately correct deficiencies, we may need to find alternative CMOs, which would significantly impact our ability to develop and obtain regulatory approval for our product candidates, and if approved, to market our products. One of our CMOs is a company with ties to China. U.S. lawmakers have urged the U.S. government to investigate CMOs and CROs that have ties to China to ensure that sensitive U.S. biotechnology intellectual property is not transferred to China. Any such investigations or other regulatory actions could affect the ability of this CMO to provide services to us in a timely manner. In addition, if our CMOs and suppliers are unable to timely perform or have operations temporarily halted as a result of inspection or enforcement actions taken by the FDA or other regulatory authorities, or as a result of pandemics or other public health crises, we may experience manufacturing delays or delays in receiving healthy donor cells used in manufacturing our product candidates or may need to find alternative CMOs or suppliers, which in each case would significantly impact our ability to develop, obtain regulatory approval for, and market our product candidates, if approved.

We do not yet have sufficient information to reliably estimate the cost of the commercial manufacturing of our product candidates, and the actual cost to manufacture and process our product candidates could materially and adversely affect the commercial viability of our product candidates. Our product candidates have not been manufactured at commercial scale, may not be able to achieve commercial manufacturing, and we may be unable to create a product inventory necessary to satisfy demands for any of our product candidates following approval. As a result, we may never be able to develop a commercially viable product.

In addition, our current reliance on a limited number of CMOs and suppliers exposes us to a variety of risks, each of which could delay our preclinical studies, clinical trials, the approval, if any, of our product candidates by the FDA or foreign regulatory authorities, or the commercialization of our product candidates or result in higher costs or deprive us of potential product revenue. These risks include:

- our CMOs and suppliers may be unable to timely manufacture our product candidates or produce the quantity and quality required to meet our preclinical, clinical, and commercial needs, if any;
- our CMOs and suppliers may not be able to execute our manufacturing procedures appropriately;
- our CMOs and suppliers have their own proprietary methods, which we may not have access to if we wish to, or are required to, switch CMOs or suppliers. Additionally, we may not own, or may have to share, the intellectual property rights to any improvements made by our CMOs in the manufacturing process for our product candidates;
- our CMOs and suppliers may not perform as agreed or may not remain in business for the time required to supply our clinical trials or to successfully manufacture, store, and distribute our commercial products;
- our CMOs and suppliers could breach or terminate their agreements with us;
- we face competition for supplies from other gene and cell therapy companies, which may make it difficult for us to secure materials or the testing of such materials on commercially reasonable terms or in a timely manner;
- our CMOs may fail to adequately store the various components received from our suppliers and any damage or loss of such materials could materially impact our ability to manufacture and supply our product candidates;
- our product candidates may be damaged or otherwise made unfit for use in clinical trials during shipment from our CMOs to clinical trial sites;
- we rely on third parties to perform release tests on our product candidates prior to delivery to clinical trial sites. If these tests are not appropriately done and test data are not reliable, patients could be put at risk of serious harm;
- we may be unable to identify additional CMOs or suppliers on acceptable terms or at all because the number of potential manufacturers is limited and the FDA or foreign regulatory authorities may have questions regarding any replacement CMO or supplier. This may require new testing and regulatory interactions. In addition, a new CMO would have to be educated in, or develop substantially equivalent processes for, production of our product candidates; and

- as a result of pandemics or other public health crises, our CMOs and suppliers may experience production delays and shutdowns.

Our CMO that supplies the virus we use to insert the CAR into our CAR-T product candidates is located outside the United States. To date, our virus CMO has not been audited by the FDA, but it has received the cGMP certification for the manufacture of recombinant viral vectors from an EU national regulatory authority. There are additional risks with using a non-U.S. vendor, including:

- economic weakness, including inflation, or political instability in particular non-U.S. economies and markets;
- difficulties in compliance with non-U.S. laws and regulations;
- changes in non-U.S. regulations and customs, tariffs, and trade barriers;
- changes in non-U.S. currency exchange rates and currency controls;
- trade protection measures, import, or export licensing requirements, or other restrictive actions by U.S. or non-U.S. governments;
- negative consequences from changes in tax laws;
- difficulties in managing international logistics and transportation;
- the CMO's potential unfamiliarity with FDA requirements when shipping into the United States; and
- workforce uncertainty in countries where labor unrest is more common than in the United States.

For our allogeneic CAR-T product candidates, we rely on receiving healthy donor material to manufacture our product candidates. Variation in quality of donor T cells, and potential challenges in procuring appropriate donor material, could result in insufficient product supply or may result in us being unable to initiate or continue clinical trials on the timelines we expect.

Unlike autologous CAR-T companies, we are reliant on receiving healthy donor material to manufacture our product candidates. Healthy donor T cells vary in quality, and this variation requires us to release batches with the highest integrity based on specifications confirmed by regulatory authorities, which makes producing standardized product candidates more likely. However, this step may slow the development and commercialization pathway of those product candidates if releasable batches are not identified sufficiently rapidly. We and our CMOs have developed a screening process designed to enhance the quality and consistency of T cells used in the manufacture of our CAR-T cell product candidates, but our screening process may fail to identify suitable donor material and we may discover failures with the material after production. We may also have to develop new testing methods and update our specifications for new risks, such as screening for new viruses. We have strict specifications for donor material, which include specifications required by regulatory authorities. If we are unable to (i) identify and obtain donor material that satisfies specifications, (ii) agree with regulatory authorities on appropriate specifications, or (iii) address variability of donor T cells, there may be insufficient material or we may be unable to initiate or continue clinical trials on the timelines we expect, which could harm our reputation and adversely impact our business and prospects. Although our suppliers are currently able to provide us with donor material, if, in the future, our suppliers are unable to secure donor material due to pandemics or other public health crises or for any other reasons, we may no longer have sufficient donor material to manufacture our cell therapy product candidates. Additionally, our donor-derived product candidates may be subject to rapid recognition by a patient's immune system, thus limiting their potential efficacy.

We rely and will continue to rely on third parties to conduct our clinical trials. If these third parties do not successfully carry out their contractual duties or do not meet deadlines, we may not be able to obtain regulatory approval of, or commercialize, our product candidates.

We depend, and will continue to depend, on CROs, clinical trial sites and clinical trial principal investigators, contract laboratories, and other third parties to conduct our ongoing and future clinical trials. We will rely heavily on these third parties over the course of our clinical trials, and we control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies is conducted in accordance with the protocol and applicable legal, regulatory, and scientific standards and regulations, and our reliance on third parties does not relieve us of our regulatory responsibilities. We and these third parties are required to comply with cGCPs, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for the conduct of clinical trials on product candidates

in clinical development. Regulatory authorities enforce cGCPs through periodic inspections and for-cause inspections of clinical trial principal investigators and trial sites. If we or any of these third parties fail to comply with applicable cGCPs or fail to enroll a sufficient number of patients, we may be required to conduct additional clinical trials to support our marketing applications, which would delay the regulatory approval process. Moreover, our business may be implicated if any of these third parties violates federal, state, or foreign fraud and abuse or false claims laws and regulations or healthcare privacy and security laws, or provide us or government agencies with inaccurate, misleading, or incomplete data.

Although we design the clinical trials for our product candidates, our CROs facilitate and monitor our clinical trials. As a result, many important aspects of our clinical development programs, including site and investigator selection, and the conduct and timing and monitoring of the study, are partly or completely outside our direct control. Our reliance on third parties to conduct and monitor the progress of clinical trials also results in less direct control over the collection, management, and quality of data developed through clinical trials than would be the case if we were relying entirely upon our own employees. Communicating with third parties can also be challenging, potentially leading to mistakes as well as difficulties in coordinating activities.

Any third parties conducting our clinical trials are not, and will not be, our employees and, except for remedies available to us under our agreements with these third parties, we cannot control whether they devote sufficient time and resources to our ongoing preclinical, clinical, and nonclinical programs. These third parties may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities, which could affect their performance on our behalf. If these third parties do not successfully carry out their contractual duties or obligations or meet deadlines, if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements, or if there are other difficulties with such third parties, such as staffing difficulties, changes in priorities, or financial distress, our clinical trials may be extended, delayed, or terminated.

Unauthorized access or manipulation of our clinical trial data in databases maintained or utilized by third parties may adversely affect the validity of the data from our clinical trials and, ultimately, our clinical trials. There have been instances in the biotechnology industry of clinical trial investigators acting improperly, including data fabrication and unauthorized manipulation of data. In addition, a growing number of cybersecurity incidents are being reported, during which certain organizations gain access to databases that contain clinical trial data and demand a ransom. In such instances, it may be difficult to determine whether the validity of our clinical trial data has been compromised, thereby jeopardizing the entire clinical trial. As a result, we may not be able to complete development of, obtain regulatory approval of, or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates will be harmed, our costs could increase, and our ability to generate revenue could be delayed.

If any of our relationships with trial sites, or any CRO that we may use in the future, terminates, we may not be able to timely enter into arrangements with alternative trial sites or CROs, or do so on commercially reasonable terms. Switching or adding clinical trial sites or CROs to conduct our clinical trials involves substantial cost and requires extensive management time, training, and focus. In addition, there is a natural transition lag when a new third party must learn about our product candidates and protocols, which can result in delays that may materially impact our ability to meet our desired clinical development timelines.

We also are required to register certain ongoing clinical trials and post the results of completed clinical trials on a U.S. government-sponsored database, www.ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions. Our ANTLER phase 1 clinical trial for our CB-010 product candidate, our CaMMouflage phase 1 clinical trial for our CB-011 product candidate, and our AMpLIFY phase 1 clinical trial for our CB-012 product candidate are posted on www.ClinicalTrials.gov. For any violations of laws and regulations during the conduct of our preclinical studies and clinical trials, we could be subject to warning letters or enforcement action that may include civil and other penalties, up to and including criminal prosecution.

We may form or seek collaborations or strategic alliances in the future for the development and commercialization of one or more of our product candidates or for new product candidates. We may not be successful in those efforts and, even if we do enter into any collaborations, they may not be successful.

Our product candidate development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. To date, we have not partnered with a third party with respect to commercializing of any of our product candidates. We have entered into agreements with Pfizer with respect to certain information rights and rights of first negotiation with Pfizer regarding a BCMA Product Candidate, including our CB-011

product candidate. In the future, we may choose to partner with third parties for one or more of our product candidates. If we are unable to negotiate and enter into partnerships, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market, if approved, and generate product revenue.

If we decide to collaborate with pharmaceutical or biotechnology companies for the development and potential commercialization of any of our product candidates, or new product candidates, we may not be able to negotiate collaborations for such product candidates on a timely basis, on acceptable terms, or at all. We may also be restricted under existing agreements from entering into future collaborations. Collaborations are complex and time-consuming to negotiate and document. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the potential collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the potential collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by FDA or comparable regulatory authorities outside the United States, the potential market for the subject product candidate or candidates, the costs and complexities of manufacturing and delivering such product candidates to patients, the potential of competing biologics or other therapeutic approaches, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The potential collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than one with us for our product candidate or for a new product candidate. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators. Thus, we may face significant competition in seeking appropriate collaborators.

Furthermore, the terms of any collaborations or other arrangements that we may establish may not be favorable to us. Even if we are able to enter into a collaboration, the following are some of the risks associated with doing so:

- collaborators have significant discretion in determining the efforts and resources that they will apply to collaborations and may not devote sufficient resources to the development, manufacturing, marketing, or sale of collaboration products;
- collaborators may not pursue development and commercialization of any product candidates we may develop or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding, or external factors such as an acquisition that diverts resources or creates competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require further development of a product candidate for clinical testing;
- collaborators may adopt alternative technologies, which could decrease the marketability of our product candidates and genome-editing technologies;
- collaborators may independently develop, or develop with third parties, products that compete directly or indirectly with our product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours, that may result in the withdrawal of the collaborator support for our collaboration product candidates;
- collaborators with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of our product candidates;
- collaborators may not properly obtain, maintain, enforce, or defend our intellectual property if we grant such rights or may use our intellectual property in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or expose us to potential litigation;
- we may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change in control;

- disputes may arise between our collaborator and us that may cause the collaborator to act in a manner adverse to us and could result in the delay or termination of the research, development, or commercialization of our product candidates or that result in costly litigation or arbitration that diverts our management's attention and resources;

- collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner, if at all. For example, if a collaborator were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished, or terminated; and

- collaboration agreements may be terminated and, if terminated, we may find it more difficult to find a suitable replacement collaborator or attract new collaborators, resulting in a need for additional capital to pursue further development or commercialization of the applicable product candidates we may develop.

We may not realize the benefits of acquired assets or other strategic transactions.

We evaluate various strategic transactions on an ongoing basis. We may acquire other businesses, products or product candidates, intellectual property, or technologies as well as pursue joint ventures or investments in complementary businesses. The success of any future strategic transaction depends on various risks and uncertainties, including:

- unanticipated liabilities related to acquired companies or joint ventures;

- difficulties integrating acquired personnel, technologies, and operations into our existing business;

- retention of key employees;

- diversion of management's time and focus from operating our business to management of strategic alliances or joint ventures or acquisition integration challenges;

- increases in our expenses and reductions in our cash available for operations and other uses;

- disruption in or termination of our relationships with collaborators or suppliers as a result of such a transaction; and

- possible write-offs or impairment charges relating to acquired businesses or joint ventures.

Foreign acquisitions and joint ventures are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations, and the particular economic, political, and regulatory risks associated with specific countries.

Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, or amortization expenses or write-offs of goodwill, any of which could harm our financial condition. We could also incur losses resulting from undiscovered liabilities that are not covered by the indemnification we may obtain from the seller.

If we in-license product candidates or products or acquire businesses, we may not be able to realize the benefit of those transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain that, following a strategic transaction or license, we will achieve the results, revenue, or specific net income that justifies the transaction. Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, or amortization expenses or write-offs of goodwill, any of which could harm our financial condition.

We may be subject to claims that our employees, consultants, or third parties performing services for us have wrongfully used or disclosed confidential information of third parties.

Many of our employees were previously, and our consultants are or were previously, employed at universities or research institutions, or at other biotechnology or pharmaceutical companies. Although we try to ensure that our employees, consultants, and third parties performing services for us do not use the confidential information of former employers or other companies in their work for us, we may be subject to claims that we or these individuals have used or disclosed confidential information or intellectual property, including trade secrets, of any such individual's current or former employer or other third party. Litigation may be necessary to defend against these claims. If we fail in defending

any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to our management and employees.

Risks Relating to Employee Matters, Managing Growth, and Other Risks Relating to Our Business

Our future success depends on our ability to retain our executive officers and to attract, retain, and motivate qualified personnel.

We are highly dependent on the research and development, clinical, operational, legal, financial, and other business expertise of our executive officers, including Rachel E. Haurwitz, Ph.D., our president and chief executive officer; Steven B. Kanner, Ph.D., our chief scientific officer; Tim Kelly, M.S./M.B.A., our chief technology officer; Ruhi Khan, M.B.A., our chief business officer; Barbara G. McClung, J.D., our chief legal officer and corporate secretary; Jason V. O'Byrne, M.B.A., our chief financial officer; and Reigin Zawadzki, our chief people officer; as well as other members of our senior leadership team and our research and development team. Certain of our scientists have greatly contributed to our intellectual property and are critical as we move our CRISPR Cas12a chRDNA technology platform forward. Although we have entered into employment agreements with all of our executive officers, each of them may terminate their employment with us at any time. All of our employees are "at will," which means that any of our employees could leave our employment at any time, with or without notice.

We conduct substantially all of our research activities at our facilities in Berkeley, California. The San Francisco Bay Area is headquarters to many other biopharmaceutical companies and many academic and research institutions. Competition for skilled personnel in our industry is intense and may limit our ability to hire and retain highly qualified personnel on acceptable terms, if at all. Many of the biotechnology companies and research institutions that we compete against for qualified personnel and consultants have greater financial and other resources, different risk profiles, and a longer history in the industry than we do. Recruiting and retaining qualified research, development, manufacturing, regulatory, and clinical personnel is critical to our success. Our success also depends on our ability to continue to attract, retain, and motivate entry-level, mid-level, and senior scientific personnel as well as managers. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies, as well as academic and research institutions, for similar personnel. If we are unable to continue to attract and retain high-quality personnel and consultants, the rate and success at which we can discover and develop product candidates and operate our business will be limited.

To induce employees to remain at our company, in addition to salary and cash incentives, we provide equity awards that vest over time, the value of which may be significantly affected by movements in our stock price that are beyond our control and may be insufficient to counteract more lucrative offers from other companies.

In addition, we rely on consultants and advisors, including our co-founders and SAB, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors, including Drs. Jennifer A. Doudna and Martin Jinek, who are among our founders and who are pioneers in CRISPR genome-editing technology, are not employed by us, are employed by employers other than us, and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us.

The inability to recruit or retain certain executive officers, key employees, consultants, or advisors may impede the progress of our research, development, and commercialization objectives and have a material adverse effect on our business, intellectual property, financial condition, results of operations, and prospects.

We must continue developing and expanding our company, and we may encounter difficulties in managing this development and expansion, which could disrupt our operations.

As of March 1, 2024, we have 158 full-time employees, and we expect to continue to increase our number of employees and the scope of our operations, specifically clinical operations, in 2024 and beyond as we seek to advance development, and if successful, commercialization, of our product candidates. To manage our anticipated development and expansion, we must continue to implement and improve our managerial, operational, and financial systems; expand our facilities; and continue to recruit and train additional qualified personnel. Current and future growth imposes significant added responsibilities on members of management, including:

- identifying, recruiting, integrating, maintaining, motivating, and integrating additional employees;

- managing our internal development efforts effectively, including clinical trials and FDA or foreign regulatory authority review for our product candidates, while complying with our contractual obligations to third parties; and

- improving our operational, financial and management controls, reporting systems, and procedures.

Also, our management may need to divert a disproportionate amount of its attention away from their day-to-day activities and devote a substantial amount of time to managing these expansion activities. Due to our limited resources, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. This may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees, and reduced productivity among our remaining employees. The physical expansion of our operations may lead to significant costs and may divert financial resources from other projects, such as the development of our product candidates. If our management is unable to effectively manage this expansion, our expenses may increase more than expected, our ability to generate or increase our revenue could be reduced, and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize our product candidates, if approved, and compete effectively will depend, in part, on our ability to effectively manage the continuing development and expansion of our company.

Our internal computer systems, or those of third parties with which we interact, may fail or suffer security breaches, which could result in a material disruption of the development of our product candidates and research programs, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.

Our internal computer systems, and those of third parties with which we interact, including our clinical sites, governmental agencies, CMOs, suppliers, CROs, clinical sites, and the like, are vulnerable to damage from computer viruses, ransomware, malware, data corruption, cyber-based attacks, phishing attacks, unauthorized access, natural disasters, terrorism, war, and telecommunication and electrical failures. Attacks on information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and they are being conducted by increasingly sophisticated and organized groups and individuals with a wide range of motives and expertise. The prevalent use of mobile devices and unauthorized applications also increases the risk of data security incidents. In addition, the increase in the number of our employees, and continued hybrid working environment, has intensified our dependence on internet technology systems as some of our critical business activities are currently being conducted remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. We may also experience security breaches that may remain undetected for an extended period. Even if identified, we may be unable to adequately investigate or remediate incidents or breaches due to attackers increasingly using tools and techniques that are designed to circumvent controls, to avoid detection, and to remove or obfuscate forensic evidence.

Although we have not experienced any such material system failure, accident, or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a disruption of our product candidate development and our business operations, whether due to a loss of our trade secrets or other confidential information or other similar disruptions. For example, the loss of clinical trial data from our current or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in the theft, loss, or destruction of intellectual property, data, or other misappropriation of assets; financial loss; or otherwise compromise our confidential information, including trade secrets, and disrupt our operations, our competitive position could be harmed, and the further development and commercialization of our product candidates could be delayed, any of which could materially adversely affect our business, financial condition, results of operations, and growth prospects.

We could be subject to risks caused by misappropriation, misuse, leakage, falsification, or intentional or accidental release or loss of information maintained in the information systems and networks of our company, our third-party vendors, and clinical sites, including personal information of our employees and, potentially, our clinical study patients, and company and vendor confidential data. In addition, third parties may attempt to penetrate our systems or those of our vendors or fraudulently induce our personnel or the personnel of our vendors to disclose sensitive information to gain access to data and systems. We may experience threats to our data and systems, including malicious codes and viruses, phishing, and other cyberattacks. The number and complexity of these threats continue to increase over time. If a material breach of our information technology systems or those of our vendors occurs, the market perception of the effectiveness of our security measures could be harmed and our reputation and credibility could be damaged. We could be required to expend significant amounts of money and other resources to repair or replace information systems or networks.

In addition, we could be subject to regulatory actions or claims made by individuals and groups in private litigation involving privacy issues related to data collection and use practices and other data privacy laws and regulations, including claims for misuse or inappropriate disclosure of data, as well as unfair or deceptive practices. Although we develop and maintain systems and controls designed to prevent these events from occurring, and we have a process to identify and mitigate threats, the development and maintenance of these systems, controls, and processes is costly and requires ongoing monitoring and updating as technologies change and efforts to overcome security measures become increasingly sophisticated.

Moreover, despite our efforts, the possibility of these events occurring cannot be eliminated entirely. As we outsource more of our information systems to vendors, engage in more electronic transactions with clinical sites and collaborators, and rely more on cloud-based information systems, the related security risks will increase and we will need to expend additional resources to protect our technology and information systems. In addition, there can be no assurance that our internal information technology systems, or those of third parties with which we conduct business, will be sufficient to protect us against breakdowns, service disruption, data deterioration, or loss in the event of a system malfunction, or prevent data from being stolen or corrupted in the event of a cyberattack, security breach, industrial espionage attacks, or insider threat attacks, which could result in financial, legal, business, or reputational harm.

Our employees, clinical trial principal investigators, and consultants may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, clinical trial principal investigators, and consultants. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in other jurisdictions, to provide accurate information to the FDA and other regulatory authorities, to comply with healthcare fraud and abuse laws and regulations in the United States and in other jurisdictions, to report financial information or data accurately, or to disclose unauthorized activities to us. Such misconduct could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. We may also be subject to federal, state, and foreign laws governing the privacy and security of identifiable patient information. If our operations are found to be in violation of any of these laws that apply to us, we may be subject to significant administrative, civil, and criminal penalties. If we commercialize our products, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing, and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements.

We have adopted a Code of Business Conduct, Scientific and Data Integrity, and Ethics that is applicable to all of our employees, but it is not always possible to identify and deter employee misconduct. The precautions we take to detect and prevent misconduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations, and prospects, including the imposition of administrative, civil, and criminal penalties; damages; monetary fines; contractual damages; reputational harm; and curtailment of our operations, any of which could adversely affect our business, financial condition, results of operations, and prospects.

If we fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could harm our business; additionally, our business could be shut down until we are in compliance with those laws and regulations.

We are subject to numerous federal, state, and local environmental, health, and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment, and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We contract with third parties for the disposal of these materials and wastes. We will not be able to eliminate the risk of contamination or injury from these materials. If contamination or injury results from any use by us of hazardous materials, we could be held liable for any resulting damages. We also could incur significant costs associated with civil or criminal fines and penalties for failure to comply with these laws and regulations. In addition, we may incur substantial costs to comply with current or future environmental, health, and safety laws and regulations. These current or future laws and regulations may impair our product candidate development and research program efforts.

Moreover, there is increasing stakeholder pressure on companies to diligence environmental, social, and governance matters in the supply chain. Negative publicity regarding production methods, alleged practices, or workplace or related conditions of any of our CMOs, suppliers, CROs, clinical sites, or third parties who perform services for us could adversely affect our reputation. We could be forced to locate alternatives, which could increase our costs and result in delayed supply of components for, and manufacturing of, our product candidates, or other disruptions to our operations.

Our insurance policies are expensive and only protect us from some business risks, which may leave us exposed to certain uninsured liabilities.

Although we have obtained product liability insurance coverage for our clinical trials, it may not be adequate to cover all expenses or liabilities that we may incur. Furthermore, we anticipate that we will need to increase our insurance coverage if we successfully commercialize any product candidate. Product insurance coverage is increasingly expensive, and we may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. Once, and if, we obtain marketing approval for a product candidate, we intend to acquire product liability insurance coverage for our commercial products; however, we may be unable to obtain such product liability insurance on commercially reasonable terms or in adequate amounts. Our insurance policies may also have various exclusions, and we may be subject to a product liability claim for which we have no coverage. Additionally, we may have to pay amounts awarded by a court or negotiated in a settlement that exceed our coverage limitations or that are not covered by our insurance, and we may not have, or be able to obtain, sufficient capital to pay such amounts. Many of our license agreements require us to indemnify our licensors or licensees against certain third-party claims; we may not have insurance for those indemnifications or our insurance may be inadequate should any claim arise.

As a public company, it is expensive for us to maintain and, in the future, increase our levels of director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. Any significant uninsured liability may require us to pay substantial amounts, which would adversely affect our cash position and results of operations. As a result, it may be more difficult for us to attract and retain qualified people to serve on our board of directors, our board committees, or as executive officers.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any product candidates that we may develop.

We will face an inherent risk of product liability exposure related to the testing of our product candidates in human clinical trials and will face an even greater risk if such product candidates receive marketing approval and are sold commercially. For example, we may be sued if our product candidates cause or are perceived to cause injury or are found to be otherwise unsuitable during clinical testing, manufacturing, marketing, or sale. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, or a breach of warranties. Claims could also be asserted under state consumer protection acts. If we cannot successfully defend ourselves against claims that our product candidates caused injuries, we could incur substantial liabilities. Even a successful defense would require significant financial and management resources. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial patients;
- significant costs to defend the related litigation;
- initiation of investigations by regulators;
- diversion of our management’s time and resources;
- substantial monetary awards to clinical trial patients;
- product recalls, withdrawals, or labeling, marketing, or promotional restrictions;
- exhaustion of any available insurance and our capital resources;
- loss of revenue;

- the inability to commercialize any product candidates that we may develop; and
- a decline in our stock price.

As a public company, we are obligated to develop and maintain proper and effective internal controls over financial reporting, and any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We are required, pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley Act"), to furnish a report by management on, among other things, the effectiveness of our internal controls over financial reporting. This assessment includes disclosure of any material weaknesses identified by our management in our internal controls over financial reporting. In addition, our independent registered public accounting firm will be required to attest to the effectiveness of our internal controls over financial reporting in our first annual report required to be filed with the SEC following the date we are no longer an emerging growth company if we are not a non-accelerated filer at such time.

If we or our independent registered public accounting firm determines we have a material weakness in our internal controls over financial reporting, investors could lose confidence in the accuracy and completeness of our financial reports, the market price of our common stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities. Internal control deficiencies could also result in a restatement of our financial results in the future. Failure to remedy any material weakness or significant deficiency in our internal controls over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Our effective tax rate may fluctuate, and we may incur obligations in tax jurisdictions in excess of amounts accrued on our financial statements.

In addition to federal income tax, we are subject to taxation in various state and local tax jurisdictions. As a result, our effective tax rate is derived from a combination of applicable tax rates in the locations in which we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each jurisdiction using enacted tax rates as of the balance sheet date. Nevertheless, our effective tax rate may change from year to year due to numerous factors, including changes in the mix of our profitability, if any, from jurisdiction to jurisdiction, the results of examinations and audits of our tax filings, our inability to secure or sustain acceptable agreements with tax authorities, and changes in tax laws. Any of these factors could result in an effective tax rate significantly different from previous periods and may result in tax obligations in excess of amounts accrued in our financial statements.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

We have generated, and expect to continue to generate in the future, significant federal and state net operating loss ("NOL") carryforwards that are available to offset taxable income in future years, if any. We have also generated, and expect to continue to generate in the future, significant federal and state research and development tax credit carryforwards, and, beginning in 2022, we began to generate orphan drug credit carryforwards that are available to potentially offset federal and state income taxes, respectively, in future years, if any.

Under the Tax Cuts and Jobs Act of 2017 ("TCJA"), as modified by the Coronavirus Aid, Relief and Economic Security Act ("CARES Act"), our federal NOLs incurred in taxable years beginning after December 31, 2017 may be carried forward indefinitely. Additionally, for tax years beginning after December 31, 2020, the deductibility of federal NOLs incurred in taxable years beginning after December 31, 2017 is limited to 80% of our taxable income. It is uncertain if and to what extent various states will conform to the NOL changes contained in the TCJA and the CARES Act. Federal research and development credit and orphan drug credit carryforwards may only be carried forward for 20 years and therefore could expire unused. As a result, they may be unavailable to offset future taxes.

In addition, under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended ("Tax Code"), and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50 percentage point change, by value, in its equity ownership by certain stockholders over a rolling three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income or taxes may be limited. We have experienced prior ownership changes in 2014, 2016, and most recently in July 2021 upon our IPO. We do not expect any permanent limitations on our tax attributes. We have recorded a full valuation allowance for deferred tax assets, including NOLs and tax credits as of December 31, 2023. The issuance of common stock in the future, or shifts in the ownership of our common stock among certain stockholders, either separately or in combination, over time may result in a limitation under Sections

382 and 383 of the Code. In addition, at the state level, there may be periods during which the use of NOL carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. For example, California imposed limits on the use of California state NOLs and tax credits to offset California taxable income in years beginning after 2019 and before 2022. If an ownership change occurs and we earn taxable income in future years, the limitation on our ability to use our NOLs and other tax attribute carryforwards could adversely affect our future operating results by increasing our future income tax liabilities. See Note 15 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information.

Pandemics or other public health crises, such as the prior COVID-19 pandemic, may adversely impact our business, financial condition, and results of operations, including our preclinical studies and clinical trials, and may cause substantial disruption in the financial markets and adversely impact economies worldwide.

We may experience disruptions related to pandemics or other public health crises that could severely impact our business, preclinical studies, clinical trials, and commercialization activities, including:

- halting or suspending enrollment in our clinical trials;
- delays or difficulties in enrolling and retaining patients in our clinical trials;
- interruption of key clinical trial activities, such as clinical trial site data monitoring and efficacy, safety and translational data collection, and processing and analyses, due to limitations on travel imposed or recommended by federal, state, or local governments, employers and others or interruption of clinical trial subject visits, which may impact the collection and integrity of subject data and clinical study endpoints;
- requirements to change the ways in which our preclinical studies and clinical trials are conducted due to governmental regulations as part of a response to pandemics or other public health crises, which may result in unexpected costs, delays, or discontinuation of our preclinical studies and clinical trials altogether;
- increased adverse events and deaths in our clinical trials due to pandemic-related infections;
- increased rates of patients withdrawing from our clinical trials following enrollment as a result of contracting certain diseases or being forced to quarantine due to other public health crises;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption or delays in the operations of the FDA and comparable foreign regulatory agencies and necessary interactions with such regulatory agencies due to limitations in employee resources, limitations on travel, forced furlough of government employees, or diversion of resources, which would impact review and approval timelines;
- interruption of, or delays in receiving, supplies of components for our product candidates from our suppliers, including the supply of healthy donor cells, and delays or suspension in manufacturing by our CMOs due to staffing shortages, production slowdowns or stoppages, and disruptions in delivery systems, or due to prioritization of production for pandemic-related therapies or vaccines;
- limitations on employee resources that would otherwise be focused on advancing our business, including because of sickness of employees or their families, including our executive officers and other key employees, the desire of employees to avoid contact with large groups of people, an increased reliance on working from home, or mass transit disruptions; and
- significant disruptions and volatility in the financial markets.

The extent to which pandemics or other public health crises may impact our business, research, preclinical studies and clinical trials, productivity of our employees, supply chains, and access to capital or business development activities will depend on future developments, which are highly uncertain at this time. To the extent pandemics or other public health crisis adversely affects our business, financial condition, results of operations, and prospects, it may also have the effect of amplifying many of the other risks described in this *Risk Factors* section, such as those relating to the timing and results of our current and future clinical trials and our financing needs.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

In addition to the business disruptions caused by public health crises or potential cybersecurity attacks, our operations, and those of our CMOs, suppliers, CROs, and clinical trial sites, could be subject to disruptions, including those caused by earthquakes, power shortages or outages, telecommunications failures, water shortages or outages, floods, hurricanes, typhoons, fires, extreme weather conditions, epidemics and pandemics, and other natural or man-made disasters or business interruptions. The occurrence of any of these business disruptions could seriously harm our business, financial condition, results of operations, and prospects, and increase our costs and expenses. Our ability to manufacture our product candidates could be disrupted if our operations or those of our CMOs, suppliers, CROs, or clinical trial sites are affected by a natural or man-made disaster or other business interruption. Our corporate headquarters are located in California near major earthquake faults and fire zones. The ultimate impact on us and our general infrastructure of being located near major earthquake faults and fire zones and being consolidated in certain geographical areas is unknown, but our business, financial condition, results of operations, and prospects could suffer in the event of a major earthquake, fire, or other natural disaster. Furthermore, our preclinical work involves studies in mice. In the past, vivarium sites have been shut down by animal activists, and any disturbance or shut down at sites where our preclinical work is being conducted could jeopardize our data and affect our product candidate timelines.

Furthermore, we interact with the FDA and other federal, state, and regulatory agencies, and lack of funding for such agencies or temporary shutdowns can affect our operations. Over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, and has had to furlough critical government employees and stop critical activities. The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels; ability to hire and retain key personnel; statutory, regulatory, and policy changes; and business disruptions, such as those caused by the COVID-19 pandemic or other public health crises. Average review times at the agency have fluctuated in recent years as a result. If a prolonged government shutdown occurs, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions for our product candidates, which could have a material adverse effect on our business.

Adverse developments affecting the financial services industry could adversely affect our current and projected business operations and our financial condition and results of operations.

Adverse developments that affect financial institutions, such as events involving liquidity that are rumored or actual, have in the past and may in the future lead to bank failures and market-wide liquidity problems. For example, on March 10, 2023, Silicon Valley Bank ("SVB") was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation ("FDIC") as receiver. Similarly, on March 12, 2023, Signature Bank and Silvergate Capital Corp. were each put into receivership. Although the U.S. Department of Treasury, FDIC, and Federal Reserve Board have implemented a program to provide up to $25 billion of loans to financial institutions secured by certain of such government securities held by financial institutions to mitigate the risk of potential losses on the sale of such instruments, widespread demands for customer withdrawals or other liquidity needs of financial institutions for immediate liquidity may exceed the capacity of such program, there is no guarantee that such programs will be sufficient. Additionally, it is uncertain whether the U.S. Department of Treasury, FDIC, and Federal Reserve Board will provide access to uninsured funds in the future in the event of the closure of other banks or financial institutions, or that they would do so in a timely fashion. Although we have not experienced any adverse impact to our liquidity or to our current and projected business operations, financial condition, or results of operations as a result of the matters relating to these banks, uncertainty remains over liquidity concerns in the broader financial services industry, and our industry as a whole may be adversely impacted in ways that we cannot predict at this time.

Although we assess our banking relationships as we believe necessary or appropriate, our access to cash in amounts adequate to finance our current and projected future business operations could be significantly impaired by factors that affect the financial institutions with which we have banking relationships. These factors could include, among others, events such as liquidity constraints or failures, the ability to perform obligations under various types of financial, credit or liquidity agreements or arrangements, disruptions or instability in the financial services industry or financial markets, or concerns or negative expectations about the prospects for companies in the financial services industry. These factors could also include factors involving financial markets or the financial services industry generally. The results of events or concerns that involve one or more of these factors could include a variety of material and adverse impacts on our current and projected business operations and our financial condition and results of operations. These could include, but may not be limited to, delayed access to deposits or other financial assets or the uninsured loss of deposits or other financial assets, termination of cash management arrangements, and/or delays in accessing or actual loss of funds subject to cash management arrangements.

In addition, widespread investor concerns regarding the U.S. or international financial systems could result in less favorable commercial financing terms, including higher interest rates or costs and tighter financial and operating covenants, or systemic limitations on access to credit and liquidity sources, thereby making it more difficult for us to acquire financing on acceptable terms or at all. Any decline in available funding or access to our cash and liquidity resources could, among other risks, adversely impact our ability to meet our operating expenses, financial obligations or fulfill our other obligations, result in breaches of our financial and/or contractual obligations or result in violations of federal or state wage and hour laws. Any of these impacts, or any other impacts resulting from the factors described above or other related or similar factors not described above, could have material adverse impacts on our liquidity and our current and/or projected business operations and financial condition and results of operations.

We maintain our cash at financial institutions, often in balances that exceed federally insured limits.

We maintain the majority of our cash and cash equivalents in accounts at banking institutions in the United States that we believe are of high quality. Cash held in these accounts often exceed the FDIC insurance limits. If such banking institutions were to fail, we could lose all or a portion of amounts held in excess of such insurance limitations. As noted above, the FDIC recently took control of certain banks. In the event of failure of any of the financial institutions where we maintain our cash and cash equivalents, there can be no assurance that we would be able to access uninsured funds in a timely manner or at all. Any inability to access or delay in accessing these funds could adversely affect our business and financial position.

Unfavorable global economic conditions could adversely affect our business, financial condition, or results of operations.

Our business, financial condition, results of operations, or prospects could be adversely affected by general conditions in the global economy and in the global financial markets. A severe or prolonged economic downturn, including as a result of pandemics or other public health crises, the ongoing war between Russia and Ukraine and the ongoing conflict in the Middle East, interest rate fluctuations, rising inflation, recession, or other global financial, geopolitical crises or macroeconomic factors, could result in a variety of risks to our business, including weakened demand for our product candidates, if approved, or our ability to raise additional capital when needed on acceptable terms, if at all. Recent global events such as supply chain constraints have led to higher inflation, which, if sustained, could have a negative impact on our product development and operations. If inflation or other factors were to significantly increase our business costs, our ability to develop our current pipeline and new therapeutic product candidates may be negatively affected. Global conflicts or a weak or declining economy may increase the likelihood disruptions of our clinical trials or manufacturing and supply of our product candidates. We are currently conducting our ANTLER clinical trial at sites in Israel and, although we have not experienced delays or interruptions to date, given the conflict in the Middle East, we may experience disruptions at these sites in the future. Additionally, any supply disruptions could make it more difficult for us to find favorable pricing and reliable sources for the materials we need, which would increase pressure on our costs and increase the risk that we may be unable to acquire the necessary materials to successfully manufacture our product candidates. Current capital market conditions, including the impact of inflation, have increased borrowing rates and can be expected to significantly increase the cost of capital as compared to prior periods and could also affect our ability to raise capital on favorable terms, or at all, in order to fund our operations. Similarly, these macroeconomic factors could affect the ability of our third-party suppliers and CMOs to manufacture clinical trial materials for our product candidates. Furthermore, we currently conduct some clinical trials outside of the United States, and unfavorable global conditions could affect these trials. Any of the foregoing could harm our business and we cannot anticipate all of the ways in which such conditions could adversely impact our business.

Risks Relating to Ownership of our Common Stock

The market price of our common stock has been, and may continue to be, volatile, and our investors may suffer substantial losses if the price of our common stock drops significantly.

Due to the volatility of the market price for our common stock, investors may suffer substantial losses if the price drops significantly. Some of the factors that may cause the market price of our common stock to fluctuate include:

- the timing and results of preclinical studies and clinical trials for any product candidates that we develop;
- delay, failure, or discontinuation of any of our product candidates or research programs;
- results of preclinical studies, clinical trials, or regulatory approvals of product candidates of our competitors, or announcements about new research programs or product candidates of our competitors;

- adverse regulatory decisions, including failure to receive regulatory approval of one or more of our product candidates;
- unanticipated or serious safety concerns related to our product candidates;
- developments or changing views regarding the use of biologics, including those that involve genome editing;
- commencement or termination of collaborations;
- regulatory or legal developments in the United States and other countries;
- assertions that our product candidates infringe third-party patents;
- invalidity challenges to our intellectual property, including intellectual property that we have in-licensed;
- manufacturing delays;
- acceptance or lack of acceptance of allogeneic products;
- inability to obtain collaboration partners;
- the recruitment and retention of key personnel;
- the level of expenses related to any of our product candidates, including preclinical studies and clinical trials, as well as the level related to our research programs;
- the results of our efforts to develop additional product candidates or technologies;
- actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts;
- announcements or expectations of additional financing efforts;
- significant lawsuits, including contract disputes with our licensors, licensees, assignors, assignees, suppliers, CMOs, CROs, clinical sites, or stockholder litigation;
- sales of our common stock by us, our insiders, or other stockholders;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic and political conditions such as recessions, inflationary pressures, interest rates, fuel prices, elections, drug pricing policies, international currency fluctuations, acts of war or terrorism, geopolitical events and public health crises; and
- the other factors described in this Risk Factors section.

We are subject to securities class action litigation, which may result in substantial costs and a diversion of management's attention and resources, which could harm our business.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities, and we are currently litigating a class action complaint in the U.S. District Court for the Northern District of California, filed by purported stockholders against us and certain of our directors, officers, and underwriters. See Legal Proceedings in Item 3 of this Annual Report on Form 10-K for additional information. We may face additional securities class action litigation in the future. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years, and we expect to experience continued stock price volatility. Defending against the current litigation and any future litigation could result in substantial costs and a diversion of management’s attention and resources, which could harm our business.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock could decline.

We currently have research coverage by several biotechnology research analysts. If any of those analysts discontinue coverage, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline. If one or more of the analysts covering our business downgrade or adjust the price target as part of their evaluations of our stock, the price of our stock could decline.

If a significant amount of our shares of common stock are sold, or it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell shares, could reduce the market price of our common stock. As of March 5, 2024, we had 90,314,501 shares of common stock outstanding. Most of these shares can be sold at any time unless held by one of our affiliates, in which case the resale of those securities will be subject to volume limitations and other restrictions under Rule 144 of the Securities Act of 1933, as amended (the "Securities Act"). We have also registered all shares of common stock that we may issue under our equity compensation plans or that are issuable upon exercise of outstanding options or other equity awards. Therefore, these shares can be freely sold in the public market upon issuance and, once vested, subject to volume limitations applicable to our affiliates. If significant amounts of our shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

We are an "emerging growth company" under the JOBS ACT and a "smaller reporting company" and the reduced disclosure requirements and exemptions from certain governance requirements applicable to emerging growth companies and smaller reporting companies may make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and may remain an emerging growth company for up to five years following our IPO. For as long as we remain an emerging growth company, we are permitted and plan to rely on exemptions from certain disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act; not being required to comply with any requirement that may be adopted by the Public Company Accounting Oversight Board ("PCAOB") regarding mandatory audit firm rotation or a supplement to the auditor's report providing additional information about the audit and the financial statements; reduced disclosure obligations regarding executive compensation; and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. As a result, the information we provide stockholders will be different than the information that is available with respect to some other public companies.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We are also a "smaller reporting company," as defined by applicable rules of the SEC. Even after we no longer qualify as an emerging growth company, we may still qualify as a smaller reporting company and would be permitted to continue to take advantage of many of the same reporting exemptions, including the exemption from the auditor attestation requirements of Section 404(b) of the Sarbanes-Oxley Act as long as we do not otherwise also qualify as an "accelerated filer" or "large accelerated filer" for SEC reporting purposes, and reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements. In addition, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K.

We cannot predict if investors will find our common stock less attractive if we rely on emerging growth company or smaller reporting company exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We have incurred, and will continue to incur, increased costs as a result of operating as a public company, and our management will continue to devote substantial time to compliance initiatives and corporate governance practices.

As a public company, we have and will continue to incur significant legal, accounting, and other expenses that we did not incur as a private company. The Dodd-Frank Wall Street Reform and Consumer Protection Act, the Sarbanes-Oxley Act, the listing requirements of Nasdaq, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We have had to hire additional accounting, finance, legal, and other personnel in connection with our efforts to comply with the requirements of being, a public company. Our management and other personnel devote a substantial amount of time toward maintaining compliance with these requirements. These requirements have increased our legal and financial compliance costs and have made some activities more time-consuming and costly. Operating as a public company also makes it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced policy limits and coverage or incur substantially higher costs to obtain coverage. This may make it more difficult for us to attract and retain qualified people to serve on our board of directors or as executive officers.

As a public company, we are subject to Section 404 of the Sarbanes-Oxley Act and the related rules of the SEC, which generally require our management and independent registered public accounting firm to report on the effectiveness of our internal control over financial reporting. However, for so long as we remain an emerging growth company as defined in the JOBS Act or a smaller reporting company, we intend to take advantage of certain exemptions from various reporting requirements that are applicable to public companies that are not emerging growth companies or smaller reporting companies, including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404. Once we are no longer either an emerging growth company or a smaller reporting company or, if prior to such date, we opt to no longer take advantage of the applicable exemption, we will be required to include an opinion from our independent registered public accounting firm on the effectiveness of our internal control over financial reporting.

During the course of our review and testing, we may identify deficiencies and be unable to remediate them before we must provide the required reports. Furthermore, if we identify any material weaknesses, we may not detect errors on a timely basis and our financial statements may be materially misstated. We or our independent registered public accounting firm may not be able to conclude on an ongoing basis that we have effective internal control over financial reporting, which could materially and adversely affect our business, financial condition, results of operations, and prospects; cause investors to lose confidence in our reported financial information; and cause the trading price of our stock to fall. In addition, as a public company we are required to file accurate and timely quarterly and annual reports with the SEC under the Exchange Act. In order to report our results of operations and financial statements on an accurate and timely basis, we depend in part on third parties to provide timely and accurate notice of their costs to us. Any failure to report our financial results on an accurate and timely basis could result in sanctions, lawsuits, delisting of our shares from Nasdaq, or other adverse consequences that would materially and adversely affect our business, financial condition, results of operations, and prospects.

We do not expect to pay any dividends for the foreseeable future. Investors may never obtain a return on their investment.

You should not rely on an investment in our common stock to provide dividend income. We do not anticipate that we will pay any dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our existing operations. In addition, any future credit facility may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not invest in our common stock.

Provisions in our amended and restated certificate of incorporation, our amended and restated bylaws, and Delaware law may have anti-takeover effects that could discourage an acquisition of us by others, even if an acquisition would be beneficial to our stockholders. These provisions may prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation, amended and restated bylaws, and Delaware law contain provisions that may have the effect of discouraging, delaying, or preventing a change in control of us or changes in our management that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares. Our amended and restated certificate of incorporation and bylaws include provisions that:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend, and other rights superior to our common stock;
- established a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors, the chair of our board, or our chief executive officer;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder matters to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- provide that our directors may be removed only for cause;
- expressly authorized our board of directors to make, alter, amend, or repeal our amended and restated bylaws; and
- require supermajority votes of the holders of our common stock to amend our amended and restated bylaws and specified provisions of our amended and restated certificate of incorporation.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock.

In addition, because we are incorporated in the State of Delaware, we are governed by the provisions of Section 203 of the General Corporation Law of the State of Delaware, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Any provision of our amended and restated certificate of incorporation, amended and restated bylaws, or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our failure to meet the continued listing requirements of Nasdaq could result in a delisting of our common stock.

Our common stock is currently listed on the Nasdaq Global Select Market. In order to maintain this listing, we must continue to satisfy minimum financial and other continued listing requirements and standards, including corporate governance requirements, director diversity requirements, and a minimum closing bid price requirement. There can be no assurance that we will continue to be able to comply with the applicable Nasdaq listing requirements. If we fail to comply with the continued listing requirements of Nasdaq, Nasdaq may take steps to delist our common stock. In the event that our common stock is delisted from Nasdaq and is not eligible for quotation or listing on another market or exchange, trading of our common stock could be conducted only in the over-the-counter market or on an electronic bulletin board established for unlisted securities such as the Pink Sheets or the OTC Bulletin Board. If this were to occur, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock and there would likely also be a reduction in our coverage by securities analysts and the news media, which could cause the price of our common stock to decline

further. Furthermore, if we were to be delisted from Nasdaq, our common stock would cease to be recognized as "covered securities" and we would be subject to regulation in each state in which we offer our securities.

In the future, we may be subject to board of director diversity requirements under California law and, if we are unable to comply with such requirements, we may be exposed to financial penalties and our reputation may be adversely affected.

Our success depends in part on our continued ability to attract, retain, and motivate highly qualified individuals to our board of directors. In the future, as a public company domiciled in California, we may be subject to diversity requirements under California law, including having a minimum number of female directors and directors from "underrepresented communities." Although the laws mandating such requirements have to date been ruled unconstitutional by California state courts, these decisions are on appeal. An initial violation of the California laws (if in effect) could result in a fine from the California Secretary of State in the amount of $100,000, with each subsequent violation resulting in a fine of $300,000. We cannot ensure that we can recruit, attract, and/or retain qualified members of our board of directors and meet gender and diversity requirements under California law (if applicable), which may expose us to financial penalties and adversely affect our reputation.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware and the federal district courts will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, executive officers, or employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative claim or action or proceeding brought on our behalf;
- any claim or action asserting a breach of fiduciary duty or aiding and abetting a breach of fiduciary duty;
- any claim or action against us arising under the Delaware General Corporation Law, our amended and restated certificate of incorporation, or our amended and restated bylaws; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine.

This provision would not apply to suits brought to enforce a duty or liability created by the Securities Act or the Exchange Act. Furthermore, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all such Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated certificate of incorporation further provides that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Although the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring a claim in a venue other than those designated in the exclusive forum provisions. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our amended and restated certificate of incorporation. This may require significant additional costs associated with resolving the action in other jurisdictions and there can be no assurance that the provisions will be enforced by a court in those other jurisdictions.

This exclusive forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, executive officers, or other employees, which may discourage lawsuits against us and our directors, executive officers, and other employees. If a court were to find the exclusive forum provision in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could seriously harm our business.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 1C. Cybersecurity.

Cybersecurity Risk Management and Strategy

We recognize the importance of assessing, identifying, and managing material risks associated with cybersecurity threats, as such term is defined in Item 106(a) of Regulation S-K. These risks include operational risks, intellectual property or trade secret theft, improper disclosure of confidential information, fraud, extortion, harm to employees or third parties with which we do business, and violation of data privacy or security laws.

Identifying and assessing cybersecurity risk is integrated into our overall risk management systems and processes. Cybersecurity risks related to our business, technical operations, privacy, and compliance issues are identified and addressed through a multi-faceted approach including third-party assessments, internal information technology ("IT") audits, and IT security reviews. To defend, detect, and respond to cybersecurity incidents, we perform cybersecurity reviews of systems and applications; audits of applicable data policies; regular vulnerability assessments and penetration testing using external third-party tools to test security control; security incident and event management; continuous monitoring, and threat intelligence gathering; conduct employee training; and implement appropriate changes.

We also leverage third-party expertise to audit and test our cybersecurity program. These include periodic reviews of cybersecurity threats and related controls, including reviews of periodic penetration tests conducted by independent third parties. We have implemented processes to manage the cybersecurity risks associated with our use of third-party service providers. This includes proactive monitoring of third party's configurations, risk questionnaires for new technology vendors, and other processes to minimize risks associated with our third-party providers.

Security events and data incidents are evaluated, ranked by severity, and prioritized for response and remediation. Incidents are evaluated to determine materiality as well as operational and business impact, and reviewed for privacy impact.

Our risk management program also assesses third-party risks, and we perform third-party risk management to identify and mitigate risks from third parties such as vendors and suppliers. Cybersecurity risks are evaluated when determining the selection and oversight of applicable third-party service providers and potential fourth-party risks when handling and/or processing our confidential information and data. In addition to new vendor onboarding, we perform risk management during third-party cybersecurity compromise incidents to identify and mitigate risks to us from third parties.

We describe whether and how risks from identified cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us, including our business strategy, results of operations, or financial condition, see Risk Factors - *"Our internal computer systems, or those of third parties with which we interact, may fail or suffer security breaches, which could result in a material disruption of the development of our product candidates and research programs, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business,"* in Item 1A of this Annual Report on Form 10-K.

Cybersecurity Governance

Cybersecurity is an important part of our risk management processes and an area of focus for our board of directors and management. The board's audit committee is responsible for the oversight of risks from cybersecurity threats and receives updates on a quarterly basis from management, including representatives from our IT, finance, and legal departments regarding matters of cybersecurity. These updates include existing and new cybersecurity risks, status on how management is addressing and/or mitigating those risks, cybersecurity and data privacy incidents (if any) and status on key information security initiatives. Our board members also engage in ad hoc conversations with management on cybersecurity-related news events and updates to our cybersecurity risk management and strategy programs.

Our day-to-day cybersecurity risk management and strategy processes are overseen by representatives from our IT, finance, and legal departments. Such individuals have an average of over 15 years of prior work experience in various roles involving IT security, auditing, compliance, data protection, privacy, risk management, systems, and programming. These individuals are informed about and monitor the prevention, mitigation, detection, and remediation of cybersecurity incidents through their management of, and participation in, our cybersecurity risk management and strategy processes, and report to the audit committee on any appropriate items.

Item 2. Properties.

Our corporate headquarters are located in Berkeley, California, where we lease approximately 61,735 and 10,000 square feet of research and development, laboratory, and office space. These leases expire in March 2031 and July 2032, respectively. We have the ability to extend these leases for an additional five years each. See Note 8 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information.

We believe that our existing facilities are adequate for our near-term needs and that suitable additional facilities will be available in the future if and when needed.

Item 3. Legal Proceedings.

From time to time, we may be subject to various legal proceedings and claims that arise in the ordinary course of our business activities. The outcome of any such proceedings or claims, irrespective of the merits, is inherently uncertain. Regardless of the outcome, litigation can have a material adverse effect on us due to defense and settlement costs, diversion of management resources, and other factors.

On April 11, 2023, a putative class action lawsuit was filed in the U.S. District Court for the Northern District of California against our company and certain of our officers and current and former members of our board of directors, B*ergman v. Caribou Biosciences, Inc., et al.*, Case Number 4:23-cv-01742-YGR ("Bergman Case"). The Bergman complaint challenges disclosures regarding our company's business, operations, and prospects, specifically with respect to the alleged durability of CB-010's therapeutic effect and the product candidate's clinical and commercial prospects, in alleged violation of Sections 11 and 15 of the Securities Act and Sections 10(b) and 20(a) of the Exchange Act. On September 18, 2023, plaintiffs filed an amended complaint adding the IPO underwriters as defendants and making substantially the same allegations as the original complaint. On November 14, 2023, we filed a motion to dismiss the amended complaint for failure to state a claim. Motion to dismiss briefing was completed on February 21, 2024, and oral argument on the motion is scheduled for April 23, 2024. We intend to vigorously defend the claims asserted against us.

On March 22, 2023, a putative class action lawsuit was filed in Superior Court of the State of California for the County of Alameda against our company and certain of our officers and current and former members of our board of directors, *Lowry v. Caribou Biosciences, Inc., et al.*, Case Number T23-1084 ("Lowry Case"). The Lowry Case challenges disclosures regarding our company's business, operations, and prospects, specifically with respect to the alleged durability of CB-010's therapeutic effect and the product candidate's clinical and commercial prospects, in alleged violation of Sections 11 and 15 of the Securities Act. The allegations and claims in the Lowry Case are substantially similar to the Securities Act claims asserted in the Bergman Case. On April 26, 2023, we filed a motion to stay the Lowry Case during the pendency of the parallel federal court litigation in the Bergman Case, and, on July 11, 2023, our motion to stay was denied. On September 11, 2023, plaintiff filed an amended complaint making substantially the same allegations as the original complaint. On November 9, 2023, we filed a motion to dismiss the amended complaint on the grounds that our certification of incorporation mandates that Securities Act claims against us be brought in federal court. On February 28, 2024, the court granted our motion to dismiss and ordered the case dismissed.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information

Our common stock is traded on the Nasdaq Global Select Market under the symbol "CRBU."

Holders

As of March 5, 2024, we had 40 holders of record of our common stock. This number does not include beneficial owners whose shares were held in street name by banks, brokers, and other financial institutions.

Dividend Policy

We have not declared or paid cash dividends on our capital stock since our inception. We intend to retain future earnings, if any, to finance the operation and expansion of our business and do not anticipate paying any cash dividends to holders of common stock in the foreseeable future.

Securities authorized for issuance under equity compensation plans

Information about securities authorized for issuance under our equity compensation plans is incorporated herein by reference to Part III, Item 12 of this Annual Report on Form 10-K.

Use of Proceeds from our IPO

On July 22, 2021, our Registration Statement on Form S-1 (File No. 333-257604) relating to our initial public offering ("IPO") of our common stock was declared effective by the U.S. Securities and Exchange Commission ("SEC"). On July 22, 2021, we filed a second Registration Statement on Form S-1 (File No. 333-258105) pursuant to Rule 462(b) of the Securities Act of 1933, as amended ("Securities Act"), which was effective immediately upon filing. Our net proceeds from our IPO, after deducting underwriting discounts and commissions and estimated offering expenses of $28.6 million, were $321.0 million, including the proceeds from shares issued upon the exercise in full of the underwriters' overallotment option. There has been no material change in our planned use of the net proceeds from our IPO from that described in the final prospectus for our IPO filed with the SEC pursuant to Rule 424(b)(4) under the Securities Act on July 23, 2021.

Recent Sales of Unregistered Securities

We had no sales of unregistered equity securities during the period covered by this Annual Report that were not previously reported in a Current Report on Form 8-K (or on Form 10-Q in lieu of Form 8-K).

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Item 6. [Reserved]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes included in this Annual Report on Form 10-K. This discussion and analysis contain forward-looking statements, including statements regarding our intentions, plans, objections and expectations for our business. Forward-looking statements are based upon current beliefs, plans and expectations related to future events and our future financial performance and are subject to risks, uncertainties and assumptions. Our actual results and the timing of certain events could differ materially from those described in or implied by these forward-looking statements as a result of various factors, including those set forth the "Risk Factors" section in Part I, Item 1A of this Annual Report on Form 10-K. See also the Special Note Regarding Forward-Looking Statements section of this Annual Report on Form 10-K.

We are a clinical-stage **C**lustered **R**egularly **I**nterspaced **S**hort **P**alindromic **R**epeats ("CRISPR") genome-editing biopharmaceutical company dedicated to developing transformative therapies for patients with devastating diseases. Our genome-editing platform, including our novel chRDNA (**C**RISPR **h**ybrid **R**NA-**DNA**, or "chRDNA," pronounced "chardonnay") technology, enables more precise genome editing to develop cell therapies that are armored to improve activity against diseases. We are advancing a pipeline of allogeneic, or off-the-shelf, cell therapies from our chimeric antigen receptor ("CAR") T ("CAR-T") cell and CAR-natural killer ("CAR-NK") cell platforms as readily available therapeutic treatments for patients.

We are initially focused on advancing our allogeneic cell therapies for the treatment of hematologic malignancies. Our therapies are directed at established cell surface targets for which autologous CAR-T cell therapeutics have already demonstrated clinical proof of concept, including CD19 and B cell maturation antigen ("BCMA"), as well as targets such as C-type lectin-like molecule-1 ("CLL-1," also known as CD371). We use our chRDNA technologies to armor our cell therapies through multiple genome-editing strategies, such as checkpoint disruption, immune cloaking, or a combination of these two strategies, to enhance activity against devastating diseases.

Our lead product candidate, CB-010, is an allogeneic CAR-T cell therapy that is, to our knowledge, the first anti-CD19 allogeneic, or off-the-shelf, CAR-T cell therapy to be evaluated in patients with second-line relapsed or refractory large B cell lymphoma ("r/r LBCL"). To our knowledge, CB-010 is also the first clinical-stage allogeneic anti-CD19 CAR-T cell therapy with programmed cell death protein 1 ("PD-1") removed from the CAR-T cell surface by a genome-edited knockout of the *PDCD1* gene. CB-010 is being evaluated in our ongoing ANTLER phase 1 clinical trial in adult patients with r/r B-NHL. In the dose escalation portion of our ANTLER clinical trial, 16 patients, the majority of whom were third-line or later, were enrolled and treated with a single dose of CB-010. Three dose levels of CB-010 were evaluated: dose level 1 ($40x10^6$ viable CAR-T cells, n=8), dose level 2 ($80x10^6$ viable CAR-T cells, n=5), and dose level 3 ($120x10^6$ viable CAR-T cells, n=3). CB-010 was generally well-tolerated with adverse events as expected for anti-CD19 CAR-T cell therapies. Based on these encouraging dose escalation data, we are evaluating CB-010 in second-line LBCL patients in the dose expansion portion of the ongoing ANTLER trial to determine the recommended phase 2 dose ("RP2D"). CB-010 has received regenerative medicine advanced therapy ("RMAT") designation for r/r LBCL, fast track designation for relapsed or refractory B cell non-Hodgkin lymphoma ("r/r B-NHL"), and orphan drug designation for follicular lymphoma ("FL"), from the U.S. Food and Drug Administration ("FDA").

Our second product candidate, CB-011, is an allogeneic CAR-T cell therapy that is, to our knowledge, the first anti-BCMA CAR-T cell therapy incorporating an immune cloaking approach that includes both the removal of the endogenous beta-2 microglobulin ("B2M") protein and insertion of a beta-2-microglobulin–human-leukocyte-antigen-E–peptide transgene ("B2M–HLA-E"). This strategy is designed to reduce CAR-T cell rejection by both patient T cells and natural killer ("NK") cells to potentially enable more durable antitumor activity. CB-011 is being evaluated in our CaMMouflage phase 1 clinical trial in adult patients with relapsed or refractory multiple myeloma ("r/r MM"). Dose level 1 ($50x10^6$ viable CAR-T cells, n=3) and dose level 2 ($150x10^6$ viable CAR-T cells, n=3) have been cleared in our CaMMouflage trial without any observed dose-limiting toxicities ("DLTs"), and we are currently enrolling patients at dose level 3 ($450x10^6$ viable CAR-T cells). CB-011 was granted fast track and orphan drug designations for r/r MM from the FDA.

The third product candidate from our CAR-T cell platform is CB-012, an allogeneic CAR-T cell therapy targeting CLL-1 (also known as CD371). CB-012 is, to our knowledge, the first allogeneic CAR-T cell therapy with both checkpoint disruption and immune cloaking strategies, and its manufacture requires a total of five genome edits. We believe that CLL-1 is an attractive target for acute myeloid leukemia ("AML") due to its expression on myeloid cancer cells, its enrichment in leukemic stem cells, and its absence on hematopoietic stem cells ("HSCs").We have dosed the first patient in

our AMpLify phase 1 clinical trial, which is evaluating CB-012 in adult patients with relapsed or refractory AML ("r/r AML") at dose level 1 ($25x10^6$ viable CAR-T cells).

Since our founding in 2011, we have devoted substantially all of our resources to organizing and staffing, business planning, raising capital, expanding our genome-editing platform technologies, developing our product candidates and building our pipeline, creating and maintaining our intellectual property portfolio, and establishing arrangements with third parties for the manufacture, testing, and clinical trial evaluations of our product candidates. We do not have any products approved for commercial sale and have not generated any revenue from product sales. We have incurred operating losses since commencement of our operations.

To date, we have primarily funded our operations through proceeds from the sales of our capital stock, revenue from our license and collaboration agreements, and proceeds from the sale of shares of Intellia Therapeutics, Inc. ("Intellia") common stock.

Our net losses for the years ended December 31, 2023 and 2022 were $102.1 million and $99.4 million, respectively. We had an accumulated deficit of $299.3 million as of December 31, 2023. Our net losses and operating losses may fluctuate from quarter to quarter and year to year depending primarily on the timing of expenses associated with our clinical trials and nonclinical studies and our other research and development expenses. We anticipate that our expenses will increase substantially as we:

- advance the ANTLER phase 1 clinical trial and initiate the planned pivotal phase 3 clinical trial for our CB-010 product candidate, the CaMMouflage phase 1 clinical trial for our CB-011 product candidate, and the AMpLify phase 1 clinical trial for our CB-012 product candidate;
- continue our current research programs and our preclinical and clinical development of our other current product candidates and any other product candidates we identify and choose to develop;
- hire additional clinical, quality control, regulatory, technical operations, and scientific personnel;
- seek to identify additional research programs and additional product candidates;
- further develop our genome-editing technologies;
- acquire or in-license technologies;
- expand, maintain, enforce, and defend our intellectual property portfolio;
- seek regulatory and marketing approvals for any of our product candidates that successfully complete clinical trials, if any;
- establish and expand manufacturing capabilities and supply chain capacity for our product candidates;
- add operational, legal, financial, and management information systems and personnel;
- experience any delays, challenges, or other issues associated with any of the above, including the failure of clinical trials meeting endpoints, unanticipated preclinical results, or clinical trial data subject to differing interpretations, or the occurrence of potential safety issues or other development or regulatory challenges;
- make royalty, milestone, or other payments under current, and any future, agreements with third parties;
- establish a sales, marketing, and distribution infrastructure to commercialize any product candidates for which we obtain marketing approval; and
- continue to operate as a public company.

We do not own or operate any manufacturing facilities. We use multiple contract manufacturing organizations ("CMOs") to individually manufacture, under current good manufacturing processes, our chRDNA guides, Cas9 and Cas12a proteins, plasmids, and adeno-associated virus serotype 6 ("AAV6") vectors used in the manufacture of our cell therapy product candidates as well as the CAR-T and CAR-NK cell therapy product candidates themselves. We expect to continue to rely on our CMOs for the manufacturing of our preclinical study and clinical trial materials, and most of these

CMOs have capabilities for commercial manufacturing. Additionally, we may decide to build our own manufacturing facility in the future to provide greater flexibility and control over our clinical or commercial manufacturing needs.

Because of the numerous risks and uncertainties associated with therapeutic product development, we may never achieve profitability and, unless and until we are able to develop and commercialize our product candidates, we will need to continue to raise additional capital. Until we can generate significant revenue from product sales, if ever, we expect to finance our operations through equity offerings (including our at-the-market facility), debt financings, collaborations and strategic alliances, licensing arrangements, or other sources. There are no assurances that we will be successful in obtaining an adequate level of financing to support our business plans as needed on acceptable terms, or at all. If we raise additional funds through collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property, future revenue streams, research programs, or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise capital as and when needed or on attractive terms, we may have to significantly delay, reduce, or discontinue the development and commercialization of our product candidates or scale back or terminate our pursuit of new in-licenses and acquisitions.

Components of Results of Operations

Licensing and Collaboration Revenue

We have not generated any revenue from product sales to date and do not expect to generate any revenue from the sale of products in the foreseeable future. If our development efforts for our product candidates are successful and result in regulatory approval and commercialization, we may generate revenue in the future from product sales. We cannot predict if, when, or to what extent we will generate revenue from the commercialization and sale of our product candidates if we succeed in obtaining regulatory approval for these product candidates.

To date, all of our revenue consists of licensing and collaboration revenue earned from collaboration and/or licensing agreements entered into with third parties, including related parties. Under these agreements, we license rights to certain intellectual property controlled by us. The terms of these arrangements typically include payments to us of one or more of the following: nonrefundable, upfront license fees or exclusivity fees; annual maintenance fees; regulatory and/or commercial milestone payments; research and development payments; and royalties on the net sales of products and/or services. Each of these payments results in licensing and collaboration revenue. Revenue under such licensing and collaboration agreements was $34.5 million and $13.9 million for the years ended December 31, 2023 and 2022, respectively. See Note 4 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information.

For the foreseeable future, we expect substantially all of our revenue will be generated from licensing and collaboration agreements.

Operating Expenses

Research and Development Expenses

Our research and development expenses consist of internal and external expenses incurred in connection with the development of our product candidates and our platform technologies, and our in-licensing, assignment, and other third-party agreements.

External costs include:

- costs associated with acquiring technology and intellectual property licenses that have no alternative future uses, sublicensing revenues, and milestones;
- costs incurred in connection with the preclinical and clinical development and manufacturing of our product candidates, including under agreements CMOs, suppliers, clinical research organizations (“CROs”), and clinical sites; and
- other research and development costs, including laboratory materials and supplies, and consulting services.

Internal costs include:

- personnel-related costs, including salaries, benefits, and share-based compensation expense, for our research and development personnel; and
- allocated facilities and other overhead expenses, including expenses for rent, facilities maintenance, and depreciation.

We expense research and development costs as incurred. Costs of certain activities are recognized based on an evaluation of the progress to completion of specific tasks. However, payments made prior to the receipt of goods or services that will be used or rendered for future research and development activities are deferred and capitalized as prepaid expenses and other current assets on our consolidated balance sheets. The capitalized amounts are recognized as expenses as the goods are delivered or as related services are performed. We separately track certain external costs on a program-by-program basis; however, we do not track costs that are deployed across multiple programs.

Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical trials. We expect that our research and development expenses will increase substantially for the foreseeable future as we continue to implement our business strategy; advance our product candidates through clinical trials and later stages of development; conduct preclinical studies and clinical trials for our other product candidates; seek regulatory approvals for any product candidates that successfully complete clinical trials; expand our research and development efforts and incur expenses associated with hiring additional personnel to support our research and development efforts; and seek to identify, in-license, acquire, and/or develop additional product candidates.

The successful development of our CAR-T product candidates, as well as other potential future product candidates, is highly uncertain. Accordingly, at this time, we cannot reasonably estimate or know the nature, timing, and costs of the efforts that will be necessary to complete the development of our product candidates. We are also unable to predict when, if ever, we will generate revenue and material net cash inflows from the commercialization and sale of any of our product candidates for which we may obtain marketing approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs, and timing of preclinical studies, clinical trials, and development of our product candidates will depend on a variety of factors, including:

- sufficiency of our financial and other resources;
- acceptance of our CRISPR chRDNA genome-editing technology;
- ability to develop differentiating features so that our products have a competitive edge;
- completion of preclinical studies;
- establishment, maintenance, enforcement, and defense of our patents and other intellectual property rights;
- our ability to not infringe, misappropriate, or otherwise violate third-party intellectual property rights;
- clearance of IND applications to initiate clinical trials on new product candidates;
- successful enrollment in, and completion of, our clinical trials on our product candidates;
- data from our clinical trials that support an acceptable risk-benefit profile of our product candidates for the intended patient populations and that demonstrate safety and efficacy;
- entry into collaborations to further the development of our product candidates or for the development of new product candidates;
- successful development of our internal process development and transfer to larger-scale facilities;
- establishment of agreements with CMOs and suppliers for clinical and commercial supplies and scaling up manufacturing processes and capabilities to support our clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;

- grant of regulatory exclusivity for our product candidates;
- establishment of sales, marketing, and distribution capabilities necessary for commercialization of our product candidates if and when approved, whether by us or in collaboration with third parties;
- maintenance of a continued acceptable safety profile of our products post-approval;
- acceptance of our product candidates, if and when approved by the applicable regulatory authorities, by patients, the medical community, and third-party payors;
- ability of our products to compete with other therapies and treatment options;
- establishment and maintenance of healthcare coverage and adequate reimbursement; and
- expanded indications and patient populations for our products.

The following table summarizes our research and development expenses for the periods indicated:

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
External costs:			
Expenses related to licenses, sublicensing revenue, and milestones	$ 2,777	$ 3,169	$ (392)
Services provided by CROs, CMOs, and other third parties that conduct preclinical studies and clinical trials on our behalf	45,777	30,367	15,410
Other research and development expenses	16,967	16,703	264
Total external costs	65,521	50,239	15,282
Internal costs:			
Personnel-related expenses	35,411	24,123	11,288
Facilities and other allocated expenses	11,143	7,868	3,275
Total internal costs	46,554	31,991	14,563
Total research and development expenses	$ 112,075	$ 82,230	$ 29,845

General and Administrative Expenses

Our general and administrative expenses consist primarily of personnel-related costs, intellectual property costs, consulting costs, and allocated overhead, including rent, equipment depreciation, and utilities. Personnel-related costs consist of salaries, benefits, and stock-based compensation for our general and administrative personnel. Intellectual property costs include expenses for filing, prosecuting, and maintaining patents and patent applications, including certain patents and patent applications that we license from third parties. We are entitled to receive reimbursement from third parties of a portion of the costs for filing, prosecuting, and maintaining certain patents and patent applications. We accrue for these reimbursements as the respective expenses are incurred and classify such reimbursements as a reduction of general and administrative expenses. During the years ended December 31, 2023 and 2022, we recorded $1.5 million and $3.5 million, respectively, of patent cost reimbursements as a reduction to general and administrative expense.

We expect that our general and administrative expenses will increase in the future as a result of expanding our operations, including hiring personnel, preparing for potential commercialization of our product candidates, and additional facility occupancy costs, as well as other expenses necessary to support the growth and operations of a clinical-stage public company.

Other Income (Expense)

Other income (expense) consists primarily of interest income earned on cash and marketable securities and the change in fair value of the Memorial Sloan Kettering Cancer Center ("MSKCC") success payments liability under our Exclusive License Agreement, dated November 13, 2020 with MSKCC ("MSKCC Agreement").

Results of Operations

Comparison of the Years Ended December 31, 2023 and 2022

The following table summarizes our results of operations for the periods indicated:

	Years Ended December 31,		Change
	2023	2022	$
		(in thousands)	
Licensing and collaboration revenue	$ 34,477	$ 13,851	$ 20,626
Operating expenses			
Research and development	112,075	82,230	29,845
General and administrative	38,461	38,020	441
Total operating expenses	150,536	120,250	30,286
Loss from operations	(116,059)	(106,399)	(9,660)
Other income (expense)			
Change in fair value of equity securities	(6)	(133)	127
Change in fair value of the MSKCC success payments liability	(1,288)	2,429	(3,717)
Other income, net	15,476	4,752	10,724
Total other income	14,182	7,048	7,134
Net loss before provision for income taxes	(101,877)	(99,351)	(2,526)
Provision for income taxes	193	70	123
Net loss	$ (102,070)	$ (99,421)	$ (2,649)

Licensing and Collaboration Revenue

Licensing and collaboration revenue increased by $20.6 million to $34.5 million for the year ended December 31, 2023 from $13.9 million for the year ended December 31, 2022. This increase primarily relates to a $16.8 million increase in revenue recognized under the now-terminated Collaboration and License Agreement (as amended, "AbbVie Agreement") with AbbVie Manufacturing Management Unlimited Company ("AbbVie"). In connection with the termination of the AbbVie Agreement, we recognized the remaining deferred revenue of $20.8 million during the year ended December 31, 2023.

The following table summarizes our revenue by licensee for the years ended December 31, 2023 and 2022:

	Years Ended December 31,		Change
	2023	2022	
		(in thousands)	
AbbVie	$ 24,802	$ 7,956	$ 16,846
Edge Animal Health, related party	1,150	—	1,150
Pfizer, related party	1,243	—	1,243
Other licensees	7,282	5,895	1,387
Total licensing and collaboration revenue	$ 34,477	$ 13,851	$ 20,626

Research and Development Expenses

Research and development expenses increased by $29.8 million to $112.1 million for the year ended December 31, 2023 from $82.2 million for the year ended December 31, 2022. This increase was primarily related to an increase of $15.4 million of external CMO and CRO activities for our clinical CAR-T cell therapy product candidates, including an increase of $5.1 million due to timing of CMO activities, and $10.3 million in CRO activities for clinical

trials; $11.3 million in personnel-related expenses, including stock-based compensation, due to headcount increases; and $3.3 million in facilities and other allocated expenses. These increases were partially offset by a $0.4 million decrease in expenses related to licenses, sublicensing revenue, and milestones.

General and Administrative Expenses

General and administrative expenses increased by $0.4 million to $38.5 million for the year ended December 31, 2023 from $38.0 million for the year ended December 31, 2022. This increase was primarily related to increases of $3.1 million in personnel-related expenses, including stock-based compensation, due to headcount increases; and $0.9 million in facilities and other allocated expenses. These increases were partially offset by decreases of $2.4 million in legal and director and officer insurance expenses, and other service related expenses; and a $1.0 million in patent prosecution and maintenance costs.

Total Other Income

Total other income increased by $7.1 million for the year ended December 31, 2023 as compared to the year ended December 31, 2022.

We recognized a loss related to the change in the fair value of the MSKCC success payments liability in the amount of $1.3 million for the year ended December 31, 2023. We recognized a gain related to the change in the fair value of the MSKCC success payments liability in the amount of $2.4 million for the year ended December 31, 2022.

We recognized a $10.7 million increase in other income during the year ended December 31, 2023 compared to December 31, 2022. The increase primarily relates to an increase of $10.7 million in interest income earned from marketable securities in 2023.

Income Tax

An income tax expense of $0.2 million was recognized for the year ended December 31, 2023, which was primarily related to deferred state taxes. An income tax expense of $0.1 million was recognized for the year ended December 31, 2022, which was primarily related to current federal taxes of $0.2 million, partially offset by a state deferred tax benefit of $0.1 million.

Liquidity, Capital Resources, and Capital Requirements

Sources of Liquidity

Since our inception, we have not generated any revenue from product sales and have incurred significant operating losses and negative cash flows from our operations. We have funded our operations through sales of our capital stock, including sales of our convertible preferred stock, which generated approximately $150.1 million in aggregate net proceeds through 2021, from our initial public offering ("IPO") in 2021, which generated approximately $321.0 million in net proceeds, and from an underwritten follow-on public offering in 2023 which generated approximately $134.4 million in net proceeds. We have also received approximately $88.4 million in net proceeds from the sale of Intellia common stock through 2020. Additionally, we received a $25.0 million equity investment from Pfizer, Inc. ("Pfizer") through a private placement transaction in June 2023. Through December 31, 2023, we received approximately $95.1 million from licensing agreements, licensing and collaboration agreements, a service agreement, patent assignments, and government grants, including $36.7 million that was received from AbbVie under the now-terminated AbbVie Agreement.

On August 9, 2022, we filed a universal shelf registration statement on Form S-3 ("Shelf Registration Statement") with the SEC, which allows us to, from time to time, sell up to $400.0 million of common stock, preferred stock, debt securities, warrants, rights, or units comprised of any combination thereof (including the $100.0 million of common stock reserved for our at-the-market equity offering program described below). The Shelf Registration Statement was declared effective by the SEC on August 16, 2022. As of December 31, 2023, we had sold securities in an aggregate amount of $144.9 million under the Shelf Registration Statement.

On August 9, 2022, we entered into an Open Market Sale Agreement℠ (the "ATM Sales Agreement") with Jefferies LLC ("Jefferies"), pursuant to which, upon the terms and subject to the conditions and limitations set forth in the ATM Sales Agreement, we may, from time to time, in our sole discretion, issue and sell, through Jefferies, acting as sales agent, up to $100.0 million of our shares of common stock, by any method permitted by law deemed to be an "at the

market offering" as defined in Rule 415(a)(4) of the Securities Act of 1933, as amended ("Securities Act"). Jefferies uses commercially reasonable efforts consistent with its normal sales and trading practices to sell shares from time to time, based upon our instructions (including any price or size limits or other customary parameters or conditions we may impose). We will pay Jefferies a commission equal to 3.0% of the aggregate gross proceeds of any shares sold through Jefferies pursuant to the ATM Sales Agreement. For the year ended December 31, 2023, we sold 168,635 shares of our common stock under the ATM Sales Agreement at an average price per share of $7.32 for aggregate gross proceeds of $1.2 million ($1.0 million net of offering expenses).

In February 2024, we sold 1,594,171 shares of our common stock under the ATM Sales Agreement, at an average price per share of $7.33 for aggregate gross proceeds of $11.7 million ($11.3 million, net of offering expenses).

In July and August 2023, we issued and sold a total of 22,115,384 shares of our common stock in an underwritten follow-on public offering at a price to the public of $6.50 per share, which included the full exercise of the underwriters' right to purchase 2,884,615 additional shares of our common stock. The total net proceeds from the offering were approximately $134.4 million, after deducting underwriting discounts and commissions and offering expenses. The shares were sold under the Shelf Registration Statement.

As of December 31, 2023, we had cash, cash equivalents, and marketable securities of $372.4 million. We will continue to be dependent upon equity financing, debt financing, collaboration and licensing arrangements, and/or other forms of capital raises at least until we are able to generate significant positive cash flows from our operations. We have no current ongoing material financing commitments, such as lines of credit or guarantees, that are expected to affect our liquidity over the next five years, except for our lease commitments, and payments under certain of our license agreements as described in Note 4 and Note 9, respectively, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Based on our current operating plan, we expect that our existing cash, cash equivalents, and marketable securities will be sufficient to fund our current operating plan for at least the next 12 months from the date of this Annual Report on Form 10-K. We have based these estimates on our current assumptions, which may require future adjustments based on our ongoing business decisions.

Contractual Obligations and Commitments

We enter into contracts in the normal course of business with suppliers, CMOs, CROs, clinical trial sites, licensors, assignors, and the like. These agreements provide for termination at the request of either party generally with less than one-year notice and, therefore, we believe that our non-cancelable obligations under these agreements are not material. Some of these agreements include contingent payments that will become payable if and when we achieve certain development, regulatory, clinical, and/or commercial milestones. As of December 31, 2023, the satisfaction and timing of such contingent payments is uncertain and is not reasonably estimable.

We have milestones, royalties, and/or other payments due to third parties under our existing license and assignment agreements. See Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. We cannot estimate when such payments will be due and none of these events is probable to occur as of December 31, 2023.

MSKCC Agreement Success Payments

Under the MSKCC Agreement, we are obligated to make success payments to MSKCC of up to $35.0 million if our stock price increases by certain multiples of increasing value based on a comparison of the fair market value of our common stock with $5.1914 per share, adjusted for future stock splits, during a specified time period. The relevant time period commences when the first patient is dosed with our first CLL-1 product candidate (CB-012) in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of our biologics license application ("BLA") by the FDA or 10 years from the date the first patient was dosed with our first CLL-1 product candidate in the first phase 1 clinical trial. As of December 31, 2023 the timing and likelihood of triggering the MSKCC success payments are uncertain. See note 4 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for more information about the MSKCC success payments liability.

Leases

We have operating lease agreements for our office spaces. As of December 31, 2023, we had lease payment obligations totaling $41.7 million, of which $3.5 million is due within 12 months.

Strategic Investment

On June 29, 2023, we entered into a Securities Purchase Agreement ("Securities Purchase Agreement") with Pfizer, Inc. ("Pfizer") pursuant to which we, in a private placement transaction, agreed to issue and sell to Pfizer 4,690,431 shares of our common stock, par value $0.0001 per share, at a purchase price of $5.33 per share, for aggregate gross proceeds of approximately $25.0 million ("Pfizer Investment"). The issuance and sale of the shares to Pfizer closed on June 30, 2023. We granted certain registration rights to Pfizer under the Securities Purchase Agreement covering the resale of the shares. Unless otherwise agreed by Pfizer, we have agreed to use the proceeds from the Pfizer Investment solely in connection with (i) the development program for our allogeneic anti-BCMA CAR-T cell therapy known as CB-011 product candidate that is being evaluated in our CaMMouflage clinical trial and/or (ii) any other single-targeted anti-BCMA CAR-T cell therapy using an anti-BCMA single-chain variable fragment owned or controlled by us (collectively, cell therapies described in clauses (i) and (ii) are referred to as a "BCMA Product Candidate"), for 36 months beginning on June 29, 2023.

On June 29, 2023, in connection with the Pfizer Investment, we and Pfizer also entered into an Information Rights Agreement, having a 36-month term. Under the Information Rights Agreement, we granted Pfizer a 30-calendar day right of first negotiation ("ROFN") if we commence or engage with any third party with respect to a potential grant of rights to develop and/or commercialize a BCMA Product Candidate, including, without limitation, a license agreement, a co-promotion/co-commercialization agreement, a profit share agreement, a joint venture agreement, or an asset sale agreement (a "Grant of Program Rights"). If we and Pfizer do not reach an agreement with respect to a Grant of Program Rights within the 30-day period, then we may pursue negotiations and enter into an agreement with any third party. If we and such third party do not reach agreement on the Grant of Program Rights within a specified time period, Pfizer's right of first negotiation will be reinstated. Under the Information Rights Agreement, we also granted Pfizer the right to designate one representative to serve on our scientific advisory board ("SAB"). Through an information sharing committee, we provide calendar quarter updates to Pfizer regarding the development program for a BCMA Product Candidate. Additionally, we agreed to provide Pfizer access to any preclinical or interim or final clinical data (including raw data) and results generated as part of the development program for a BCMA Product Candidate at the same time that we provide such data to a third party (other than to our service providers or the FDA or other regulatory authorities), subject to certain confidentiality exceptions.

On June 29, 2023, we and Pfizer also entered into a Voting Agreement, pursuant to which, for a period of 12 months, Pfizer agreed to cause our voting securities that Pfizer beneficially owns (within the meaning of Rules 13d-3 or 13d-5 under the Securities Exchange Act of 1934, as amended ("Exchange Act")) in excess of 4.99% of our then issued and outstanding voting securities to be voted (i) with respect to any matter directly relating to remuneration of directors, directors' insurance, or indemnification or release from liability of directors, in a manner proportionally consistent with the votes properly cast for and against by holders of voting securities not beneficially owned by Pfizer, and (ii) with respect to any other matter in which Pfizer shall have the right to vote such voting securities, in accordance with the recommendation of our board of directors or any applicable committee thereof.

Funding Requirements

Our primary use of cash is to fund operating expenses and research and development expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable, accrued expenses, and prepaid expenses.

Our future funding requirements will depend on many factors, including the following:

- the initiation, progress, timing, costs, and results of preclinical studies and clinical trials for our product candidates;
- the clinical development plans we establish for these product candidates;
- the number and characteristics of the product candidates that we develop;
- increases in the number of our employees and expansion of our physical facilities to support growth initiatives;
- the outcome, timing, and cost of meeting regulatory requirements established by the FDA and other comparable foreign regulatory authorities;

- whether we enter into any collaboration agreements and the terms of any such agreements;
- the cost of filing and prosecuting our patent applications, and maintaining and enforcing our patents and other intellectual property rights;
- the extent to which we acquire or in-license other product candidates and technologies;
- the cost of defending intellectual property disputes, including patent infringement actions brought by third parties against our products after we receive regulatory approval;
- the effect of competing technological and market developments;
- the cost and timing of completion of commercial-scale outsourced manufacturing activities or the cost and timing of completion of clinical-scale and commercial-scale internal manufacturing activities;
- the cost of establishing sales, marketing, and distribution capabilities for any product candidates for which we may receive regulatory approval in regions where we choose to commercialize our products without a partner;
- the amount of revenue, if any, received from commercial sales of our product candidates, should any of our product candidates receive marketing approval;
- the achievement of milestones or occurrence of other developments that trigger payments by or to third parties;
- our implementation of various computerized informational systems and efforts to enhance operational systems;
- the impact of public health crises or geopolitical events on our clinical development or operations;
- the impact of inflationary pressures on the cost of our operations; and
- the costs associated with being a public company.

Furthermore, our operating plans may change, and we expect to need additional funds to meet operational needs and capital requirements for clinical trials and other research and development expenditures.

Because of the numerous risks and uncertainties associated with the development of human therapeutics, we may never achieve profitability and, unless and until we are able to develop and commercialize our product candidates, we will need to continue to raise additional capital; however, funding may not be available to us on acceptable terms, or at all. If we are unable to obtain adequate financing when needed, we may have to delay, reduce the scope of, or suspend one or more of our preclinical studies, clinical trials, research and development programs, and/or commercialization efforts. We may seek to raise any necessary additional capital through a combination of equity offerings (including our at-the-market equity offering program), debt financings, collaborations and strategic alliances, licensing arrangements, or other sources. If we raise additional capital through debt financing, we may be subject to covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in dilution to our stockholders. If we raise additional capital through marketing and distribution arrangements or other collaborations, strategic alliances, or licensing arrangements with third parties or other sources, we may have to relinquish certain valuable rights to our product candidates, technologies, future revenue streams, or research programs or grant licenses on terms that may not be favorable to us.

Cash Flows

Comparison of the Years Ended December 31, 2023 and 2022

The following table summarizes our cash flows for the periods indicated:

	Years Ended December 31,		
	2023	2022	Change
		(in thousands)	
Cash used in operating activities	$ (93,291)	$ (90,966)	$ (2,325)
Cash used in investing activities	(68,183)	(93,249)	25,066
Cash provided by financing activities	154,298	2,133	152,165
Net decrease in cash and cash equivalents	$ (7,176)	$ (182,082)	$ 174,906

Cash Used in Operating Activities

Net cash used in operating activities was $93.3 million and $91.0 million for the years ended December 31, 2023 and 2022, respectively.

Cash used in operating activities in the year ended December 31, 2023 was primarily due to our net loss of $102.1 million, adjusted by non-cash charges of $16.1 million and net changes in our net operating assets and liabilities of $7.3 million. Our 2023 non-cash charges were primarily comprised of $13.8 million of stock-based compensation, $3.5 million of depreciation and amortization expense, $2.0 million of non-cash lease expense, and change in the fair value of the MSKCC success payments liability of $1.3 million, which were partially offset by the accretion of discounts on marketable securities of $4.4 million. The changes in our net operating assets and liabilities were due to decreases of $16.9 million in deferred revenue and $0.6 million in operating lease liabilities, partially offset by increases of $5.7 million in accrued expenses and other current liabilities, $1.8 million in accounts payable, and decreases of $1.8 million in prepaid expenses and other current assets and $0.8 million in contract assets.

Cash used in operating activities in the year ended December 31, 2022 was primarily due to our net loss of $99.4 million, adjusted by non-cash charges of $12.7 million and net changes in our net operating assets and liabilities of $4.2 million. Our 2022 non-cash charges were primarily comprised of $11.7 million of stock-based compensation, $2.0 million of non-cash lease expense, $1.6 million of depreciation and amortization expense, and $0.6 million of acquired in-process research and development, which were partially offset by the change in the fair value of the MSKCC success payments liability of $2.4 million, and accretion of discounts on marketable securities of $0.8 million. The changes in our net operating assets and liabilities were due to decreases of $4.8 million in deferred revenue, $2.7 million in accounts payable, $0.4 million in operating lease liabilities, and increases of $1.0 million in prepaid expenses and other current assets, $0.8 million in contract assets, and $0.6 million in other assets, partially offset by increases of $2.0 million in accrued expenses and other current liabilities, and decreases of $3.3 million in other receivables, and $1.0 million in accounts receivable.

Cash Used in Investing Activities

During the year ended December 31, 2023 and 2022, cash used in investing activities was $68.2 million and $93.2 million, respectively.

Cash used in investing activities for the year ended December 31, 2023 was primarily due to purchases of marketable securities of $394.8 million and purchases of property and equipment of $11.6 million, partially offset by the proceeds from sales and maturities of marketable securities of $338.2 million.

Cash used in investing activities for the year ended December 31, 2022 was primarily due to our purchases of marketable securities of $339.1 million, purchases of property and equipment of $6.5 million, and in-process research and development of $0.6 million, partially offset by the proceeds of maturities of marketable securities of $252.9 million.

Cash Provided by Financing Activities

During the years ended December 31, 2023 and 2022, cash provided by financing activities was $154.3 million and $2.1 million, respectively.

Cash provided by financing activities for the year ended December 31, 2023 was due to proceeds from a follow-on public offering, net of offering expenses, of $134.4 million, proceeds from issuance of common stock in a private placement with Pfizer of $17.3 million, the exercise of stock options and purchases of common stock under the 2021 Employee Stock Purchase Plan ("ESPP") of $1.6 million, and proceeds from issuance of common stock related to an at-the-market offering, net of offering expenses, of $1.0 million.

Cash provided by financing activities for the year ended December 31, 2022 was due to the exercise of stock options and purchases of common stock under the 2021 Employee Stock Purchase Plan of $2.1 million.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP"). The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, as well as the reported expenses incurred during the reporting periods. These estimates and assumptions are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates and assumptions could occur in the future. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Changes in estimates are reflected in reported results for the period in which they become known. Actual results may differ from these estimates under different assumptions or conditions.

Although our significant accounting policies are described in more details in Note 2 to our consolidated financial statements included in this Annual Report on Form 10-K, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We recognize revenue when a licensee or assignee, or a customer, obtains control of the promised goods or services (e.g., an intellectual property license), in an amount that reflects the consideration that we have received or expect to receive in exchange for those goods or services.

We apply judgment to determine whether agreements are within the scope of revenue for customers or other accounting guidance at an agreement's effective date. Our revenues are primarily derived through our license agreements and license and collaboration agreements. The terms of these types of agreements may include (i) licenses for our technology, (ii) research and development services, and (iii) services or obligations in connection with participation in research or governance committees. Payments to us under these arrangements typically include one or more of the following: nonrefundable upfront license or exclusivity fees; annual maintenance fees; regulatory and/or commercial milestone payments; research and development payments; and royalties on the net sales of licensed products and/or services.

We assess whether the promises in our arrangements with customers are considered as distinct performance obligations that should be accounted for separately. Judgment is required to determine whether the license to intellectual property is distinct from the research and development services or participation on steering committees.

If the license to intellectual property controlled by us is determined to be distinct from the other performance obligations identified in the arrangement, we recognize revenues allocated to the license at the point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are combined with other promises, we utilize our judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Certain of our license agreements have two performance obligations: a license and a material right for annual license renewals. Such license agreements require payments of non-refundable annual license fees by the licensees (referred to as maintenance fees in the license agreements), which are accounted for as material rights for license renewals.

We recognize revenue when the license is delivered and the term commences. Revenue for the material right for license renewals is recognized at the point in time the annual license fee is paid by the licensee and the renewal period begins.

Our collaboration and license agreements may include contingent milestone payments. Such milestone payments are typically payable when the collaboration partner or licensee achieves certain predetermined clinical, regulatory, and/or commercial milestones. Milestone payments that are not within our or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At each reporting date, we re-evaluate whether the milestones are considered probable of being achieved and estimate the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price in such period of determination.

Our collaboration and license agreements may also include contingent payments related to sales-based milestones. Sales-based milestones are typically payable when annual sales of a covered product reach specified levels. Sales-based milestones are recognized at the later of when the associated performance obligation has been satisfied or when the sales occur. Unlike other contingency payments, such as regulatory milestones, sales-based milestones are not included in the transaction price based on estimates at the inception of the contract, but rather, are included when the sales or usage occur.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate and accrue expenses. Research and development expenses are charged to expense as incurred. Research and development expenses include those for certain payroll and personnel; laboratory supplies; consulting; manufacturing; external clinical; and allocated overhead, including rent, equipment depreciation, and utilities.

We record accrued liabilities for estimated costs of research and development activities conducted by third-party CMOs, CROs, and other third-party service providers. We accrue for these costs based on factors such as estimates of the work completed and in accordance with service agreements established with these third-party service providers.

We make significant judgments and estimates in determining the accrual balance in each reporting period. As actual costs become known, we adjust our accruals. Although we do not expect our estimates to be materially different than the actual amounts incurred, the estimates for the status and timing of services performed relative to the actual status and timing of services performed may vary and could result in us reporting amounts that are too high or too low in any one period. Our accrual is dependent, in part, upon the receipt of timely and accurate reporting from CROs, CMOs, and other third-party vendors. Variations in the assumptions used to estimate accruals including, but not limited to, the number of patients enrolled, the rate of patient enrollment and the actual services performed, may vary from our estimates, resulting in adjustments to clinical trial and manufacturing expenses in future periods. Changes in these estimates that result in material changes to our accruals could materially affect our financial condition and results of operations. If the actual timing of the performance of services or the level of effort varies from our estimate, we adjust the accrual or prepaid expense accordingly.

Stock-Based Compensation Expense

Stock-based compensation expense related to awards to employees is measured at the grant date based on the fair value of the award. We determine the grant-date fair value of the options using the Black-Scholes option-pricing model. The fair value of restricted stock units ("RSUs") and performance-based RSUs ("PSUs") awards is determined based on the number of units granted and the closing price of our common stock as of the grant-date. The fair value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period, and is adjusted for pre-vesting forfeitures in the period in which the forfeitures occur.

We use the Black-Scholes valuation model as the method for determining the estimated fair market value of stock options and stock purchases under our ESPP with the following assumptions:

Fair Market Value of Common Stock — Prior to our IPO, the fair market value of our common stock was determined by our board of directors with assistance from management and external valuation experts. Our approach to estimating the fair market value of our common stock was consistent with the methods outlined in the American Institute of Certified Public Accountants' Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as

Compensation. Following our IPO, the fair market value of our common stock is based on its closing price on Nasdaq as reported on the date of the stock option grant.

Expected Term — Expected term represents the period that our stock-based awards are expected to be outstanding and is determined using the simplified method. The expected term for our ESPP is the offering period.

Expected Volatility — Expected volatility is estimated based on the average historical volatilities of common stock of comparable publicly traded entities over a period equal to the expected term of the stock option grants, as we do not have sufficient trading history for our common stock. Comparable companies are chosen based on their size, stage in the life cycle, or area of specialty. We will continue to apply this process for stock options awards and ESPP stock purchases until enough historical information regarding the volatility of our stock price becomes available.

Expected Dividends — Expected dividends is zero as we have never paid dividends on our common stock and have no plans to do so in the foreseeable future.

Risk-Free Interest Rate — Risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the award.

We recorded stock-based compensation expense of $13.8 million and $11.7 million for the years ended December 31, 2023 and 2022, respectively. As of December 31, 2023, there was $25.8 million of unrecognized stock-based compensation expense related to employee stock options that is expected to be recognized over a weighted-average period of 2.5 years. As of December 31, 2023, the total unrecognized stock-based compensation expense related to unvested RSUs was $0.8 million, which is expected to be recognized over the remaining weighted-average vesting period of 1.0 years. We expect to continue to grant equity-based awards in the future, and to the extent that we do, our stock-based compensation expense recognized in future periods will likely increase.

Income Taxes

We account for income taxes using the asset and liability method. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in our consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Tax benefits related to uncertain tax positions are recognized when it is more likely than not that a tax position will be sustained during an audit. Interest and penalties related to unrecognized tax benefits are included within the provision for income tax.

Recently Issued Accounting Pronouncements

See Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for more information regarding recently issued accounting pronouncements.

Emerging Growth Company and Smaller Reporting Company Status

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 Act ("JOBS Act"). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (a) are no longer an emerging growth company or (b) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to those of companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We expect to use the extended transition period for any other new or revised accounting standards during the period in which we remain an emerging growth company.

We are also a "smaller reporting company." If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available

to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited consolidated financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We had cash, cash equivalents, and marketable securities of $372.4 million as of December 31, 2023, consisting of cash, money market funds, government securities, commercial paper, and corporate debt securities, and we had cash and cash equivalents of $317.0 million as of December 31, 2022, consisting of cash, money market funds, government securities, commercial paper, and corporate debt securities.

We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure. A hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our consolidated financial statements. We have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates.

We do not have any foreign currency. Inflation generally affects us by increasing our cost of labor, manufacturing, and clinical trial costs. We do not believe that inflation had a material effect on our results of operations during the year ended December 31, 2023.

Item 8. Financial Statements and Supplementary Data.

The information required by this item is presented at the end of this Annual Report on Form 10-K beginning on page F-1 and is incorporated herein by reference. An index of those financial statements is found in Part IV, Item 15, Exhibits, Financial Statement Schedules, of this Annual Report on Form 10-K.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We have established disclosure controls and procedures designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms and is accumulated and communicated to management, including the principal executive officer (our president and chief executive officer) and principal financial officer (our chief financial officer), to allow timely decisions regarding required disclosure.

Our management, under the supervision and with the participation of our president and chief executive officer and chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K.

Management recognizes that any disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives. Our disclosure controls and procedures have been designed to provide reasonable assurance of achieving their objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. Based on such evaluation, our president and chief executive officer (principal executive officer) and our chief financial officer (principal financial officer) have concluded that our disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2023.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is a

process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2023 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in its 2013 Internal Control - Integrated Framework. Based on this assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2023.

Attestation Report of the Registered Public Accounting Firm

Our independent registered accounting firm is not required to opine on the effectiveness of our internal control over financial reporting pursuant to Section 404 of Sarbanes-Oxley Act of 2002 until we are no longer either an "emerging growth company" as defined in the JOBS Act or a smaller reporting company as defined by Rule 12b-2 of the Exchange Act that does not otherwise also qualify as an "accelerated filer" or "large accelerated filer" for SEC reporting purposes.

Changes in Internal Control

There were no changes in our internal control over financial reporting identified in management's evaluation pursuant to Rules 13a-15(f) or 15d-15(f) of the Exchange Act during our fourth fiscal quarter ended December 31, 2023 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

(a) Not applicable.

(b) During the quarter ended December 31, 2023, no director or Section 16 officer adopted or terminated any Rule 10b5-1 trading arrangement or non-Rule 10b5-1 trading arrangement.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Certain information required by Part III is incorporated by reference herein to our definitive proxy statement for our 2024 Annual Meeting of Stockholders ("2024 Proxy Statement") pursuant to Regulation 14A of the Securities Exchange Act of 1934, as amended ("Exchange Act"), which we intend to file not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item of Form 10-K will be included under the caption "Board of Directors and Corporate Governance" and subsections thereof, including "—Nominees for Election as Class III Directors," "—Directors Continuing in Office," "—Family Relationships," "—Classified Board of Directors," and "—Board Committees—Audit Committee," and under the caption "Executive Officers" in our 2024 Proxy Statement and is incorporated by reference herein.

We have adopted a written Code of Business Conduct, Scientific and Data Integrity, and Ethics ("Code of Conduct") that applies to all of our employees, consultants, contractors, and directors. A current copy of the Code of Conduct is available on the Corporate Governance section of our website, https://investor.cariboubio.com. The audit committee of our board of directors is responsible for overseeing the Code of Conduct and must approve any waivers of the Code of Conduct for our executive officers and directors. We expect that any amendments to the Code of Conduct, or any waivers of its requirements with respect to our executive officers and directors, will be disclosed on our website at the address indicated above. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this Annual Report on Form 10-K. We have included our website address as an inactive textual reference only. We will provide to any person, without charge, a copy of the Code of Conduct. Any such request should be directed to Caribou Biosciences, Inc., 2929 7th Street, Suite 105, Berkeley, CA 94710, Attn: Chief Legal Officer and Corporate Secretary, telephone: 510-982-6030.

Item 11. Executive Compensation.

The information required by this item of Form 10-K will be included under the caption "Executive and Director Compensation" in our 2024 Proxy Statement and is incorporated by reference herein.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this item of Form 10-K will be included under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Securities Authorized for Issuance Under Equity Compensation Plans" in our 2024 Proxy Statement and is incorporated by reference herein.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this item of Form 10-K will be included under the captions "Certain Relationships and Related Party Transactions" and "Board of Directors and Corporate Governance—Director Independence" in our 2024 Proxy Statement and is incorporated by reference herein.

Item 14. Principal Accounting Fees and Services.

The information required by this item of Form 10-K will be included under the caption "Proposal No. 2 - Ratification of Selection of Independent Registered Public Accounting Firm" in our 2024 Proxy Statement and is incorporated by reference herein.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are included in this Annual Report on Form 10-K:

1. The following Report and Consolidated Financial Statements of our company are included in this Annual Report on Form 10-K:

Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)

Consolidated Balance Sheets

Consolidated Statements of Operations and Comprehensive Loss

Consolidated Statements of Stockholders' Equity

Consolidated Statements of Cash Flows

Notes to Consolidated Financial Statements

See Index to Consolidated Financial Statements on page F-1 of this Annual Report on Form 10-K, incorporated into this item by reference.

2. All financial schedules have been omitted because the required information is either presented in the consolidated financial statements or the notes thereto or is not applicable or required.

3. The exhibits required by Item 601 of Regulation S-K and Item 15(b) of this Annual Report on Form 10-K are listed in the Exhibit Index immediately preceding the signature page of this Annual Report on Form 10-K. The exhibits listed in the Exhibit Index are incorporated by reference herein.

Item 16. Form 10-K Summary.

Not applicable.

EXHIBIT INDEX

Exhibit Number	Exhibit Description
3.1	Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K (File No. 001-40631), filed with the SEC on July 28, 2021)
3.2	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.2 of the Registrant's Current Report on Form 8-K (File No. 001-40631), filed with the SEC on July 28, 2021)
4.1	Description of Common Stock (incorporated by reference to Exhibit 4.1 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.1 †	Exclusive License Agreement, dated November 13, 2020, by and between the Registrant and Memorial Sloan Kettering Cancer Center (incorporated by reference to Exhibit 10.2 of the Form S-1) filed by the Registrant on July 1, 2021 (File No. 333-257604) (the "Form S-1")
10.2†	Sale and Assignment Agreement, dated January 31, 2020, by and between the Registrant and ProMab Biotechnologies, Inc. (incorporated by reference to Exhibit 10.3 of the Form S-1)
10.3†	Amendment No. 1 to Sale and Assignment Agreement, dated October 20, 2020, by and between the Registrant and ProMab Biotechnologies, Inc. (incorporated by reference to Exhibit 10.4 of the Form S-1)

10.4†	Amendment No. 2 to Sale and Assignment Agreement, dated December 15, 2020, by and between the Registrant and ProMab Biotechnologies, Inc. (incorporated by reference to Exhibit 10.5 of the Form S-1)
10.5	Amendment No. 3 to Sale and Assignment Agreement, dated May 5, 2020, by and between the Registrant and ProMab Biotechnologies, Inc. (incorporated by reference to Exhibit 10.6 of the Form S-1)
10.6†	Amended and Restated Collaboration and License Agreement, dated July 13, 2015, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.7 of the Form S-1)
10.7†	Amendment No. 1 to Amended and Restated Collaboration and License Agreement, dated January 21, 2016, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.8 of the Form S-1)
10.8†	Amendment No. 2 to Amended and Restated Collaboration and License Agreement, dated July 18, 2016, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.9 of the Form S-1)
10.9†	Amendment No. 3 to Amended and Restated Collaboration and License Agreement, dated March 13, 2017, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.10 of the Form S-1)
10.10†	Amendment No. 4 to Amended and Restated Collaboration and License Agreement, dated June 26, 2017, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.11 of the Form S-1)
10.11†	Amendment No. 5 to Amended and Restated Collaboration and License Agreement, dated May 25, 2018, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.12 of the Form S-1)
10.12†	Amendment No. 6 to Amended and Restated Collaboration and License Agreement, dated June 2, 2019, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.13 of the Form S-1)
10.13†	Amendment No. 7 to Amended and Restated Collaboration and License Agreement, dated December 18, 2020, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.14 of the Form S-1)
10.14†	Amendment No. 8 to Amended and Restated Collaboration and License Agreement, dated December 18, 2020, by and between the Registrant and Pioneer Hi-Bred International, Inc. (incorporated by reference to Exhibit 10.15 of the Form S-1)
10.15†	License Agreement, dated July 16, 2014, by and between the Registrant and Intellia, LLC (incorporated by reference to Exhibit 10.16 of the Form S-1)
10.16†	Amendment No. 1 to the License Agreement, dated February 2, 2016, by and between the Registrant and Intellia Therapeutics, Inc. as successor in interest to Intellia, LLC (incorporated by reference to Exhibit 10.17 of the Form S-1)
10.17†	Addendum to License Agreement, dated February 2, 2016, by and between the Registrant and Intellia Therapeutics, Inc. as successor in interest to Intellia, LLC (incorporated by reference to Exhibit 10.18 of the Form S-1)
10.18†	Leaseback Agreement, dated June 16, 2021, by and between the Registrant and Intellia Therapeutics, Inc. (incorporated by reference to Exhibit 10.19 of Amendment No. 1 to Form S-1 registration statement filed by the Registrant on July 19, 2021 (File No. 333-257604)
10.19†	Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement for a Programmable DNA Restriction Enzyme for Genome Editing, dated December 15, 2016, by and among the Registrant and the other parties thereto (incorporated by reference to Exhibit 10.20 of the Form S-1)
10.20†	Exclusive License Agreement, dated April 16, 2013, by and among the Registrant, The Regents of the University of California, and the University of Vienna (incorporated by reference to Exhibit 10.21 of the Form S-1)
10.21†	Amendment No. 1 to the Exclusive License Agreement, dated April 16, 2013, by and among the Registrant, The Regents of the University of California, and the University of Vienna (incorporated by reference to Exhibit 10.22 of the Form S-1)

10.22†	Amendment No. 2 to the Exclusive License Agreement, dated April 17, 2013, by and among the Registrant, The Regents of the University of California, and the University of Vienna (incorporated by reference to Exhibit 10.23 of the Form S-1)
10.23†	Amendment No. 3 to the Exclusive License Agreement, dated April 16, 2021, by and among the Registrant, The Regents of the University of California, and the University of Vienna (incorporated by reference to Exhibit 10.24 of the Form S-1)
10.24†	Memorandum of Understanding, dated March 14, 2019, by and among the Registrant, the University of Vienna, and the Regents of the University of California (incorporated by reference to Exhibit 10.25 of the Form S-1)
10.25	Amended and Restated Office/Laboratory Lease, dated March 31, 2021, by and between the Registrant and 2929 Seventh St., LLC (incorporated by reference to Exhibit 10.26 of the Form S-1)
10.26	First Amendment, dated January 11, 2022, to Amended and Restated Office/Laboratory Lease by and between Registrant and 2929 Seventh St., LLC (incorporated by reference to Exhibit 10.27 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.27	Office/Laboratory Lease between the Registrant and 7th Street Property III General Partnership, having a commencement date of January 13, 2022 (incorporated by reference to Exhibit 10.1 of the Form 8-K (File No. 001-40631) filed by the Registrant on January 19, 2022)
10.28	Rider 1 to Office/Laboratory Lease between the Registrant and 7th Street Property III General Partnership, effective as of the lease commencement date of January 13, 2022 (incorporated by reference to Exhibit 10.29 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.29+	Officer Employment Agreement by and between the Registrant and Rachel E. Haurwitz, Ph.D., dated July 27, 2021 (incorporated by reference to Exhibit 10.1 of the Form 8-K (File No. 001-40631) filed by the Registrant on July 28, 2021)
10.30+†	Compensation Letter, dated February 11, 2022, from the Registrant to Rachel E. Haurwitz, Ph.D. (incorporated by reference to Exhibit 10.31 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.31+	Compensation Letter, dated February 16, 2023, from the Registrant to Rachel E. Haurwitz, Ph.D. (incorporated by reference to Exhibit 10.34 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.32+*	Compensation Letter, dated February 20, 2024, from the Registrant to Rachel E. Haurwitz, Ph.D.
10.33+	Officer Employment Agreement by and between the Registrant and Jason V. O'Byrne, dated July 27, 2021 (incorporated by reference to Exhibit 10.4 of the Form 8-K (File No. 001-40631) filed by the Registrant on July 28, 2021)
10.34+†	Offer Letter between the Registrant and Jason V. O'Byrne, dated January 5, 2021 (incorporated by reference to Exhibit 10.33 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.35+†	Compensation Letter, dated February 11, 2022, from the Registrant to Jason V. O'Byrne (incorporated by reference to Exhibit 10.34 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.36+	Compensation Letter, dated February 16, 2023, from the Registrant to Jason V. O'Byrne (incorporated by reference to Exhibit 10.38 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.37+*	Compensation Letter, dated February 20, 2024, from the Registrant to Jason V. O'Byrne
10.38+	Officer Employment Agreement by and between the Registrant and Barbara G. McClung, J.D., dated July 27, 2021 (incorporated by reference to Exhibit 10.3 of the Form 8-K (File No. 001-40631) filed by the Registrant on July 28, 2021)

10.39+†	Compensation Letter, dated February 11, 2022, from the Registrant to Barbara G. McClung, J.D. (incorporated by reference to Exhibit 10.36 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.40+	Compensation Letter, dated February 16, 2023, from the Registrant to Barbara G. McClung, J.D. (incorporated by reference to Exhibit 10.41 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.41+*	Compensation Letter, dated February 20, 2024, from the Registrant to Barbara G. McClung, J.D.
10.42+	Officer Employment Agreement by and between the Registrant and Steven B. Kanner, Ph.D., dated July 27, 2021 (incorporated by reference to Exhibit 10.2 of the Form 8-K (File No. 001-40631) filed by the Registrant on July 28, 2021)
10.43+†	Compensation Letter, dated February 11, 2022, from the Registrant to Steven B. Kanner, Ph.D. (incorporated by reference to Exhibit 10.38 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.44+	Compensation Letter, dated February 16, 2023, from the Registrant to Steven B. Kanner, Ph.D. (incorporated by reference to Exhibit 10.44 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.45+*	Compensation Letter, dated February 20, 2024, from the Registrant to Steven B. Kanner, Ph.D.
10.46+	Officer Employment Agreement by and between the Registrant and Ruhi Khan, dated November 8, 2021 (incorporated by reference to Exhibit 10.39 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.47+†	Compensation Letter, dated February 11, 2022, from the Registrant to Ruhi Khan (incorporated by reference to Exhibit 10.46 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.48+	Compensation Letter, dated February 16, 2023, from the Registrant to Ruhi Khan (incorporated by reference to Exhibit 10.47 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.49+*	Compensation Letter, dated February 20, 2024, from the Registrant to Ruhi Khan
10.50+†	Offer Letter, dated October 29, 2021, between the Registrant and Syed Rizvi, M.D. (incorporated by reference to Exhibit 10.41 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.51+	Officer Employment Agreement by and between the Registrant and Syed Rizvi, M.D., dated January 18, 2022 (incorporated by reference to Exhibit 10.42 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No. 001-40631), filed with the SEC on March 21, 2022)
10.52+†	Compensation Letter, dated February 16, 2023, from the Registrant to Syed Rizvi, M.D. (incorporated by reference to Exhibit 10.50 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2022 (File No. 001-40631), filed with the SEC on March 9, 2023)
10.53+†*	Separation Letter, dated December 19, 2023, between the Registrant and Syed Rizvi, M.D.
10.54+	Offer Letter, dated November 22, 2023, between the Registrant and Tim Kelly
10.55+	Officer Employment Agreement by and between the Registrant and Tim Kelly, dated January 1, 2024
10.56+	2013 Equity Incentive Plan (as originally adopted) (incorporated by reference to Exhibit 99.1 of the Form S-8 filed by the Registrant on July 26, 2021 (File No.: 333-258173) (the "Form S-8"))
10.57+	2013 Equity Incentive Plan (as amended May 12, 2016) (incorporated by reference to Exhibit 99.2 of the Form S-8)
10.58+	2013 Equity Incentive Plan of the Registrant, as amended and restated April 3, 2019 and as amended March 1, 2021 (incorporated by reference to Exhibit 10.41 of Amendment No. 1 to Form S-1 registration statement filed by the Registrant on July 19, 2021 (File No. 333-257604))

10.59+	Amendment to 2013 Equity Incentive Plan (effective December 9, 2021) (incorporated by reference to Exhibit 10.46 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No.: 333-258173), filed with the SEC on March 21, 2022)
10.60+	Form of Stock Option Agreement under the 2013 Equity Incentive Plan (as originally adopted and as amended May 12, 2016) (incorporated by reference to Exhibit 99.4 of the Form S-8)
10.61+	Form of Stock Option Agreement under the 2013 Equity Incentive Plan, as amended and restated April 3, 2019 (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2021 (File No.: 333-258173), filed by the Registrant on November 11, 2021)
10.62+	2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 99.6 of the Form S-8)
10.63+	Form of Employee Stock Option Agreement under the 2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 10.50 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No.: 333-258173), filed with the SEC on March 21, 2022)
10.64+	Form of Non-Employee Director Stock Option Agreement under the 2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 10.51 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No.: 333-258173), filed with the SEC on March 21, 2022)
10.65+	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 10.52 of the Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2021 (File No.: 333-258173), filed with the SEC on March 21, 2022)
10.66+	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2022 (File No.: 333-258173), filed by the Registrant on November 8, 2022)
10.67+	Form of Performance Stock Unit Award Grant Notice and Performance Stock Unit Award Agreement under the 2021 Equity Incentive Plan of the Registrant (incorporated by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q for the period ended September 30, 2022 (File No.: 333-258173), filed by the Registrant on November 8, 2022)
10.68+	2021 Employee Stock Purchase Plan (incorporated by reference to Exhibit 99.7 of the Form S-8)
10.69	Form of Indemnification Agreement between the Registrant and its directors and officers (incorporated by reference to Exhibit 10.50 of the Form S-1)
10.70	Open Market Sale Agreement[SM], dated August 9, 2022, by and between the Registrant and Jefferies LLC (incorporated by reference to Exhibit 1.2 to the Company's Registration Statement on Form S-3 (File No. 333-266712) filed with the SEC on August 9, 2022)
10.71	Securities Purchase Agreement, dated June 29, 2023, by and between the Registrant and Pfizer, Inc. (incorporated by reference to Exhibit 10.1 to the Form 8-K filed by the Registrant with the SEC on July 6, 2023)
10.72	Voting Agreement, dated June 29. 2023, by and between the Registrant and Pfizer, Inc. (incorporated by reference to Exhibit 10.2 to the Form 8-K filed by the Registrant with the SEC on July 6, 2023)
21.1*	List of Subsidiaries of the Registrant
23.1*	Consent of Deloitte & Touche LLP
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1#	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2#	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
97.1*	Clawback Policy

101.INS*	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document.
101.SCH*	Inline XBRL Taxonomy Extension Schema Document
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

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* Indicates filed herewith

+ Indicates management contract or compensatory plan

† Indicates certain portions of this document that constitute confidential information have been redacted in accordance with Regulation S-K, Item 601(b)(10)

This certification is being furnished solely to accompany this Annual Report on Form 10-K pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended ("Exchange Act"), or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this Annual Report on Form 10-K (this "Report") to be signed on its behalf by the undersigned, thereunto duly authorized.

CARIBOU BIOSCIENCES, INC.

Date: March 11, 2024

By: /s/ Rachel E. Haurwitz
Rachel E. Haurwitz
President and Chief Executive Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ Rachel E. Haurwitz **Rachel E. Haurwitz**	President and Chief Executive Officer (*Principal Executive Officer*); Director	March 11, 2024
/s/ Jason V. O'Byrne **Jason V. O'Byrne**	Chief Financial Officer (*Principal Financial Officer & Principal Accounting Officer*)	March 11, 2024
/s/ Scott Braunstein **Scott Braunstein**	Director	March 11, 2024
/s/ Andrew Guggenhime **Andrew Guggenhime**	Director	March 11, 2024
/s/ Dara Richardson-Heron **Dara Richardson-Heron**	Director	March 11, 2024
/s/ David Johnson **David Johnson**	Director	March 11, 2024
/s/ Natalie R. Sacks **Natalie R. Sacks**	Director	March 11, 2024
/s/ Nancy Whiting **Nancy Whiting**	Director	March 11, 2024
/s/ Ran Zheng **Ran Zheng**	Director	March 11, 2024

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Index to Audited Financial Statements as of and for the Years Ended December 31, 2023 and 2022:

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Caribou Biosciences, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Caribou Biosciences, Inc. and subsidiaries (the "Company") as of December 31, 2023 and 2022, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows, for each of the two years in the period ended December 31, 2023, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

San Francisco, California
March 11, 2024

We have served as the Company's auditor since 2016.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES
Consolidated Balance Sheets
(in thousands, except share and per share amounts)

	December 31, 2023	December 31, 2022
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 51,162	$ 58,338
Marketable securities, short-term	277,665	189,325
Accounts receivable	148	202
Contract assets	1,425	2,247
Other receivables	2,286	2,215
Prepaid expenses and other current assets	6,155	7,921
Total current assets	338,841	260,248
NON-CURRENT ASSETS		
Investments in equity securities	7,753	7,698
Marketable securities, long-term	43,577	69,373
Property and equipment, net	18,270	10,678
Operating lease, right of use assets	22,182	24,230
Other assets	1,586	1,538
TOTAL ASSETS	$ 432,209	$ 373,765
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 3,120	$ 1,146
Accrued expenses and other current liabilities	21,135	16,079
Operating lease liabilities, current	1,200	966
Deferred revenue ($2,487 and $150 from related party, respectively)	2,847	9,937
Total current liabilities	28,302	28,128
LONG-TERM LIABILITIES		
Deferred revenue, net of current portion ($3,730 and $0 from related party, respectively)	6,102	15,954
MSKCC success payments liability	2,939	1,651
Operating lease liabilities, non-current	25,908	26,780
Deferred tax liabilities	557	381
Total liabilities	63,808	72,894
COMMITMENTS AND CONTINGENCIES (Note 9)		
STOCKHOLDERS' EQUITY		
Common stock, par value $0.0001 per share, 300,000,000 shares authorized at December 31, 2023 and 2022, respectively; 88,448,948 and 61,029,184 shares issued and outstanding at December 31, 2023 and 2022, respectively	8	6
Additional paid-in-capital	667,648	499,598
Accumulated other comprehensive income (loss)	30	(1,518)
Accumulated deficit	(299,285)	(197,215)
Total stockholders' equity	368,401	300,871
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 432,209	$ 373,765

The accompanying notes are an integral part of these consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES
Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share amounts)

	Years Ended December 31,	
	2023	2022
Licensing and collaboration revenue (including $2,393 and $0, from related parties)	$ 34,477	$ 13,851
Operating expenses:		
Research and development	112,075	82,230
General and administrative	38,461	38,020
Total operating expenses	150,536	120,250
Loss from operations	(116,059)	(106,399)
Other income (expense):		
Change in fair value of equity securities	(6)	(133)
Change in fair value of the MSKCC success payments liability	(1,288)	2,429
Other income, net	15,476	4,752
Total other income	14,182	7,048
Net loss before provision for income taxes	(101,877)	(99,351)
Provision for income taxes	193	70
Net loss	(102,070)	(99,421)
Other comprehensive income (loss):		
Net unrealized gain (loss) on available-for-sale marketable securities	1,548	(1,383)
Net comprehensive loss	$ (100,522)	$ (100,804)
Net loss per share, basic and diluted	$ (1.38)	$ (1.64)
Weighted-average common shares outstanding, basic and diluted	73,807,597	60,801,133

The accompanying notes are an integral part of these consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES
Consolidated Statements of Stockholders' Equity
(in thousands, except share amounts)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
BALANCE—December 31, 2021	60,263,158	$ 6	$ 485,748	$ (135)	$ (97,794)	$ 387,825
Issuance of common stock upon employee stock plans	69,113	—	638	—	—	638
Issuance of common stock on exercise of options	696,913	—	1,497	—	—	1,497
Stock-based compensation expense	—	—	11,715	—	—	11,715
Other comprehensive loss	—	—	—	(1,383)	—	(1,383)
Net loss	—	—	—	—	(99,421)	(99,421)
BALANCE—December 31, 2022	61,029,184	$ 6	$ 499,598	$ (1,518)	$ (197,215)	$ 300,871
Issuance of common stock under employee stock plans	138,454	—	787	—	—	787
Issuance of common stock on exercise of options	228,264	—	793	—	—	793
Issuance of common stock on RSU release	78,596	—	—	—	—	—
Issuance of common stock in connection with public follow-on offering, net of offering expenses	22,115,384	2	134,423	—	—	134,425
Issuance of common stock in connection with at-the-market offering, net of offering expenses	168,635	—	1,007	—	—	1,007
Issuance of common stock pursuant to a private placement with Pfizer	4,690,431	—	17,290	—	—	17,290
Stock-based compensation expense	—	—	13,750	—	—	13,750
Other comprehensive income	—	—	—	1,548	—	1,548
Net loss	—	—	—	—	(102,070)	(102,070)
BALANCE—December 31, 2023	88,448,948	$ 8	$ 667,648	$ 30	$ (299,285)	$ 368,401

The accompanying notes are an integral part of these consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES
Consolidated Statements of Cash Flows
(in thousands)

	Years Ended December 31,	
	2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (102,070)	$ (99,421)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,525	1,622
Gain on disposal of fixed assets	(34)	—
Non-cash consideration for licensing and collaboration revenue	(61)	(205)
Change in fair value of equity securities	6	133
Stock-based compensation expense	13,750	11,716
Change in fair value of MSKCC success payments liability	1,288	(2,429)
Acquired in-process research and development	—	600
Accretion of discounts on investments in marketable securities, net	(4,425)	(797)
Non-cash lease expense	2,048	2,019
Changes in operating assets and liabilities:		
Accounts receivable	54	951
Contract assets	822	(759)
Other receivables	(71)	3,268
Prepaid expenses and other current assets	1,766	(975)
Other assets	(48)	(564)
Accounts payable	1,819	(2,721)
Accrued expenses and other current liabilities	5,743	1,953
Deferred revenue, current and long-term	(16,943)	(4,844)
Operating lease liabilities	(637)	(403)
Other liabilities	—	(15)
Deferred tax liabilities	177	(95)
Net cash used in operating activities	(93,291)	(90,966)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Proceeds from sales and maturities of marketable securities	338,188	252,868
Purchases of marketable securities	(394,758)	(339,063)
Purchases of property and equipment	(11,613)	(6,454)
Payments to acquire in-process research and development	—	(600)
Net cash used in investing activities	(68,183)	(93,249)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from public follow-on public offering, net of offering expenses	134,423	—
Proceeds from issuance of common stock in a private placement with Pfizer	17,290	—
Proceeds from exercise of stock options and purchases of common stock under employee stock purchase plan	1,578	2,133
Proceeds from issuance of common stock related to at-the-market offering, net of offering expenses	1,007	—
Net cash provided by financing activities	154,298	2,133
NET DECREASE IN CASH, CASH EQUIVALENTS, AND RESTRICTED CASH	(7,176)	(182,082)
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH — BEGINNING OF PERIOD	58,384	240,466
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH — END OF PERIOD	$ 51,208	$ 58,384
RECONCILIATION OF CASH, CASH EQUIVALENTS, AND RESTRICTED CASH		
Cash and cash equivalents	$ 51,162	$ 58,338
Restricted cash	46	46
CASH, CASH EQUIVALENTS, AND RESTRICTED CASH ON THE BALANCE SHEET	$ 51,208	$ 58,384
SUPPLEMENTAL CASH FLOW INFORMATION:		
Cash paid for income taxes	$ 170	$ —
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Purchases of property and equipment included in accounts payable and accrued expenses	$ 692	$ 1,223
Right-of-use-assets obtained in exchange for new operating lease liabilities	$ —	$ 26,249

The accompanying notes are an integral part of these consolidated financial statements.

CARIBOU BIOSCIENCES, INC. AND ITS SUBSIDIARIES
Notes to Consolidated Financial Statements

1. Description of the Business, Organization, and Liquidity

Business and Organization

Caribou Biosciences, Inc. ("Company" or "we") is a clinical-stage **C**lustered **R**egularly **I**nterspaced **S**hort **P**alindromic **R**epeats ("CRISPR") genome-editing biopharmaceutical company dedicated to developing transformative therapies for patients with devastating diseases. Our genome-editing platform, including our novel chRDNA (**C**RISPR **h**ybrid **R**NA-**DNA**, or "chRDNA," pronounced "chardonnay") technology, enables more precise genome editing to develop cell therapies that are armored to improve antitumor activity. We are advancing a pipeline of allogeneic, or off-the-shelf, cell therapies from our chimeric antigen receptor ("CAR") T ("CAR-T") cell and CAR-natural killer ("CAR-NK") cell platforms as readily available therapeutic treatments for patients.

We incorporated in October 2011 as a Delaware corporation and are headquartered in Berkeley, California. We have four wholly owned subsidiaries: Antler Holdco, LLC, incorporated in Delaware in April 2019; Microbe Holdco, LLC, incorporated in Delaware in June 2020; Arboreal Holdco, LLC, incorporated in Delaware in November 2020; and Biloba Holdco, LLC, incorporated in Delaware in April 2021. Our wholly owned subsidiaries hold interests in our equity investments and do not have operating activities.

Liquidity

We have incurred operating losses and negative cash flows from operations since our inception and we had an accumulated deficit of $299.3 million as of December 31, 2023. During the year ended December 31, 2023, we incurred a net loss of $102.1 million and used $93.3 million of cash in operating activities. We expect to continue to incur substantial losses, and our ability to achieve and sustain profitability will depend on the successful development, regulatory approval, and commercialization of our product candidates and on our generation of sufficient revenue to support our cost structure. We may never achieve profitability and, unless and until we do, we will need to continue to raise additional capital. Our management expects that existing cash, cash equivalents, and marketable securities of $372.4 million as of December 31, 2023, will be sufficient to fund our current operating plan for at least the next 12 months from the date of issuance of our consolidated financial statements.

In July and August of 2023, we issued and sold a total of 22,115,384 shares of our common stock in an underwritten follow-on public offering for total net proceeds of approximately $134.4 million, which included the full exercise of the underwriters' right to purchase 2,884,615 additional shares of our common stock.

During the year ended December 31, 2023, we sold 168,635 shares of our common stock under the Open Market Sale Agreement℠ ("ATM Sales Agreement") with Jefferies LLC ("Jefferies"), at an average price per share of $7.32 for aggregate gross proceeds of $1.2 million ($1.0 million net of offering expenses).

In February 2024, we sold 1,594,171 shares of our common stock under the ATM Sales Agreement, at an average price per share of $7.33 for aggregate gross proceeds of $11.7 million ($11.3 million, net of offering expenses).

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP") and include our and the accounts of our wholly owned subsidiaries. All intercompany accounts and transactions are eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires our management to make estimates and assumptions that affect the reported amounts of assets and liabilities; the disclosure of contingent assets and liabilities at the date of our consolidated financial statements; and the reported amounts of revenue, income, and expenses during the applicable reporting period. On an ongoing basis, we evaluate our estimates and assumptions, including those related to revenue recognition, stock-based compensation expense, accrued expenses related to research

and development activities, valuation of the Memorial Sloan Kettering Cancer Center ("MSKCC") success payments liability, operating lease right-of-use assets and liabilities, and income taxes. Our management bases its estimates on historical experience and on various other assumptions that they believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ materially from those estimates.

Segments

We operate and manage our business as one reportable operating segment, which is the business of developing a pipeline of allogeneic CAR-T and CAR-NK cell therapies. Our president and chief executive officer, who is the chief operating decision maker, reviews financial information on an aggregate basis for allocating resources and evaluating financial performance. All long-lived assets are maintained in the United States.

Concentrations of Credit Risk and Other Uncertainties

Financial instruments that potentially subject us to concentration of credit risk consist of cash and cash equivalents, accounts receivable, contract assets, other receivables, and investments in marketable securities and equity securities. Substantially all of our cash and cash equivalents are deposited in accounts at three financial institutions, and our account balances exceed federally insured limits. We mitigate the risks by investing in high-grade instruments, limiting our exposure to one issuer, and we monitor the ongoing creditworthiness of the financial institutions and issuers.

Licensees that represent 10% or more of our revenue and accounts receivable and contract assets were as follows:

	Revenue		Accounts Receivable and Contract Assets	
	Years Ended December 31,		As of December 31,	
	2023	2022	2023	2022
Licensee A	*	16.2 %	47.5 %	23.8 %
Licensee B	71.9 %	57.4 %	*	36.6 %
Total	71.9 %	73.6 %	47.5 %	60.4 %

*Less than 10%

We monitor economic conditions to identify facts or circumstances that may indicate if any of our accounts receivable are not collectible or if the contract assets should be impaired. No allowance for credit losses or contract asset impairment was recorded as of December 31, 2023 or 2022.

Revenue Recognition

We determine whether agreements are within the scope of Accounting Standard Codification ("ASC") Topic 606, Revenue from contracts with customers ("ASC 606") or other topics at the effective date of an agreement. For agreements that are determined to be within the scope of ASC 606, revenue is recognized when a licensee, or customer, obtains control of promised goods or services (e.g., an intellectual property license). The amount of revenue recognized reflects the consideration that we expect to be entitled to receive in exchange for these goods and services. To achieve this core principle, we apply the following five steps (i) identify the contract with the customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when or as we satisfy a performance obligation.

Our revenues are primarily derived through license and/or license and collaboration agreements. The terms of these types of agreements may include (i) licenses for our technology, (ii) research and development services, and (iii) services or obligations in connection with our participation in research or governance committees. Payments to us under these arrangements typically include one or more of the following: nonrefundable upfront license fees, maintenance fees, milestones, and other contingent payments to us for the achievement of defined collaboration objectives and certain preclinical, clinical, regulatory, and sales-based events, as well as royalties on sales of any commercialized products.

We assess whether the promises in our contracts with third parties are considered distinct performance obligations that should be accounted for separately. Judgment is required to determine whether a license to our intellectual property is distinct from research and development services or participation on research or governance committees.

If a license to intellectual property controlled by us is determined to be distinct from the other performance obligations identified in the agreement, we recognize revenues allocated to the license at the point in time when the license is transferred to the licensee and the licensee is able to use and benefit from the license. For licenses that are combined with other promises, we utilize our judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress for purposes of recognizing revenue. We evaluate the measure of progress using the input method for each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Certain of our license agreements include contingent milestone payments. Such milestone payments are typically payable when the collaborator or licensee achieves certain predetermined clinical, regulatory, and/or commercial milestones. Milestone payments that are not within our control or the control of the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At each reporting date, we reevaluate whether the milestones are considered probable of being reached, and we estimate the amount to be included in the transaction price by using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price in such period of determination.

Our license and/or collaboration and license agreements may also include contingent payments related to sales-based milestones. Sales-based milestones are typically payable when annual sales of a covered product reach specified levels. Sales-based milestones are recognized at the later of when the associated performance obligation has been satisfied or when the sales occur. Unlike other contingency payments, such as regulatory milestones, sales-based milestones are not included in the transaction price based on estimates at the inception of the contract, but rather, are included when the sales or usage occur. We use the sales-based royalty exception because the license is a predominant item to which sales-based royalties relate.

Certain of our license agreements have two performance obligations: a license and a material right for annual license renewals. Such license agreements require payments of non-refundable annual license fees by the licensee (referred to as maintenance fees in the license agreements), which are accounted for as material rights for license renewals. We recognize revenue when the license is delivered and the term commences. Revenue for the material right for license renewals is recognized at the point in time that the annual license fee is paid by the licensee and the renewal period begins.

Payments received under third-party contracts are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until we satisfy our performance obligations under these contracts. We record contract assets when payment is due under third-party contracts conditioned on future performance or the occurrence of other events. Amounts payable to us are recorded as accounts receivable if invoiced and if our right to consideration is unconditional.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability (Note 3).

Cash and Cash Equivalents

We consider all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. As of December 31, 2023 and 2022, cash and cash equivalents consisted of cash, money market funds, commercial paper securities, and U.S. Treasury bills.

Restricted Cash

We define restricted cash as cash and cash equivalents that cannot be withdrawn or used for general operating activities. Our restricted cash consists of a letter of credit with a financial institution related to one of our workers' compensation insurance policies. As of December 31, 2023 and 2022, we had less than $0.1 million of restricted cash, which was recorded in other assets in our consolidated balance sheets.

Marketable Securities

Our short-term and long-term marketable securities are available for sale securities and consist of U.S. Treasury bills, commercial paper, U.S. government agency bonds, and corporate debt securities. We classify those securities that mature in more than 12 months as long-term investments in the consolidated balance sheets. We record at estimated fair value based on quoted market prices or observable market inputs of almost identical assets, with the unrealized holding gains or losses recorded in other comprehensive loss in the consolidated statements of operations and comprehensive loss. The amortized cost of securities is adjusted for amortization of premiums and accretion of discounts to maturity, which are both recorded to interest income in the consolidated statements of operations and comprehensive loss. When the fair value of a debt security declines below its amortized cost basis, any portion of that decline attributable to credit losses, to the extent expected to be nonrecoverable before the sale of the security, is recognized in our statement of operations. When the fair value of a debt security declines below its amortized cost basis due to changes in interest rates, such amounts are recorded in other comprehensive loss, and are recognized in our statements of operations only if we sell or intend to sell the security before recovery of its cost basis.

Investments in Equity Securities

We may receive as consideration under our license agreements equity securities of private or public companies (an "investee"). If we determine that we do not have control over these investees under either the Variable Interest Entity ("VIE") or voting models, we then determine if we have an ability to exercise significant influence via voting interests, board of director representation, or other business relationships. If we conclude that we do not have an ability to exercise significant influence over an investee, we account for our investment at fair value and may elect to account for an equity security without a readily determinable fair value using a measurement alternative. This measurement alternative allows us to measure the equity investment at its cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or a similar investment of the same issuer. If we determine that we do have control over these companies under either voting or VIE models, we consolidate them in our consolidated financial statements.

As of December 31, 2023 and 2022, investments in equity securities, long-term, consisted primarily of our investment in the preferred stock of a private company, related party (Note 7). We concluded that our shares of the private company's preferred stock are not in substance common stock and, since these securities do not have readily determinable fair value, we account for our investment in the private company's preferred stock using the measurement alternative method. As of December 31, 2023 and 2022, we did not recognize any impairment loss related to this investment.

Property and Equipment

Property and equipment are recorded at cost, net of accumulated depreciation and amortization. Property and equipment are depreciated using the straight-line method over the estimated useful lives of the assets.

Computer equipment	3 years
Furniture and office equipment	5 years
Lab equipment	5 years
Leasehold improvements	Shorter of remaining lease term or estimated useful life

Upon retirement or sale of the assets, the cost and related accumulated depreciation and amortization are removed from the balance sheet and the resulting gain or loss is recorded in the statements of operations. Repairs and maintenance are expensed as incurred.

Impairment of Long-Lived Assets

We evaluate the carrying amount of our long-lived assets whenever events or changes in circumstances indicate that the assets may not be recoverable. An impairment loss is recognized when estimated future cash flows expected to result from the use of the asset and its eventual disposition is less than the carrying amount of the asset. To date, there have been no such impairment losses.

Leases

Under Financial Accounting Standards Board ("FASB") Accounting Standards Update ("ASU") No. 2016-02, Leases (Topic 842) and its associated amendments, we determine if an arrangement is a lease at inception. In addition, we determine whether a lease meets the classification criteria of a finance or operating lease at the lease commencement date considering whether: (i) the lease transfers ownership of the underlying asset to the lessee at the end of the lease term; (ii) the lease grants the lessee an option to purchase the underlying asset that the lessee is reasonably certain to exercise; (iii) the lease term is for a major part of the remaining economic life of the underlying asset; (iv) the present value of the sum of the lease payments and residual value guaranteed by the lessee equals or exceeds substantially all of the fair value of the underlying asset; and (v) the underlying asset is such a specialized nature that it is expected to have no alternative use to the lessor at the end of the lease term. As of December 31, 2023, our leases consisted of real estate operating leases and we did not have any finance leases.

Operating leases are included in Operating lease right-of-use assets; Operating lease liabilities, current; and Operating lease liabilities, non-current in our consolidated balance sheets. Right-of-use assets represent our right to use the underlying assets for the lease term and lease liabilities represent our obligation to make lease payments arising from the leases. Operating lease right-of-use assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. In determining the present value of lease payments, if the rate implicit in the lease is not readily determinable, we would use our incremental borrowing rate based on the information available at the lease commencement date. We would determine the incremental borrowing rate based on an analysis of corporate bond yields with a credit rating similar to ours. The determination of our incremental borrowing rate requires management judgment, including development of a synthetic credit rating and cost of debt, as we currently do not carry any debt. We believe that the estimates used in determining the incremental borrowing rate are reasonable based upon facts and circumstances. Applying different judgments to the same facts and circumstances could yield a different incremental borrowing rate. The operating lease right-of-use assets also include adjustments for prepayments and accrued lease payments and exclude lease incentives. Right-of-use assets and lease liabilities may include options to extend or terminate leases if it is reasonably certain that we will exercise such options. Lease payments which are fixed and determinable are amortized as rent and lease expense on a straight-line basis over the expected lease term. Variable lease costs, which are dependent on usage, a rate or index, including common area maintenance charges, are expensed as incurred. Lease agreements that include lease and non-lease components are accounted for as a single lease component. Lease agreements with non-cancelable terms of less than 12 months are not recorded on our balance sheets.

MSKCC Success Payments Liability

Under the terms of our Exclusive License Agreement, dated November 13, 2020, with MSKCC (Note 4), we are obligated to make success payments and a change of control payment if our stock price increases by certain multiples of increasing value based on a comparison of the fair market value of our common stock with $5.1914 per share, adjusted for any future stock splits, during a specified time period. The relevant time period commences when the first patient is dosed with our first CLL-1 product candidate (CB-012) in the first phase 1 clinical trial and ends upon the earlier of the third anniversary of approval of our biologics license application ("BLA") by the FDA or 10 years from the date the first patient was dosed with our first CLL-1 product candidate in the first phase 1 clinical trial. The success payments liability is accounted for under ASC 815, Derivatives and Hedging. The nature of the success payments liability is contingent consideration for the MSKCC exclusive license and, as such, it was accounted for as research and development expenses at estimated fair value at inception. The success payments liability is remeasured at fair value at each subsequent balance sheet date, and changes in the fair value of the success payments liability are included in other income (expense) in the consolidated statements of operations and comprehensive loss.

To determine the estimated fair value of the MSKCC success payments liability, we use a Monte Carlo simulation methodology that models the future movement of stock prices based on several key variables. This model requires significant estimates and assumptions in determining the estimated fair value of the MSKCC success payments liability at each balance sheet date. The following variables were incorporated in the estimated fair value of the success payments liability: estimated term of the success payments, fair value of common stock, expected volatility, risk-free interest rate, and estimated number and timing of valuation measurement dates on the basis of which payments may be triggered. The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and projected volatility. The assumptions used to calculate the fair value of the MSKCC success payments liability are subject to a significant amount of judgment including the expected volatility that was estimated using available information about the historical volatility of stocks of publicly traded companies that are similar to us, the estimated term, and the estimated

number and timing of valuation measurement dates. There are several valuation measurement dates that may trigger payments under the MSKCC Agreement and are considered in our valuation of the MSKCC success payments liability (Note 4).

Accrued Research and Development Expenses

Research and development expenses are charged to expense as incurred. Research and development expenses include those for certain payroll and personnel; laboratory supplies; consulting; manufacturing; external clinical; and allocated overhead, including rent, equipment depreciation, and utilities.

We record accrued liabilities for estimated costs of our research and development activities conducted by third-party service providers. We record the estimated costs of research and development activities based upon the estimated amount of services provided but not yet invoiced and include these costs in accrued liabilities in the consolidated balance sheets and within research and development expenses in the consolidated statements of operations and comprehensive loss. We accrue for these costs based on factors such as estimates of the work completed and in accordance with the third-party service agreements. If we do not identify costs that have begun to be incurred or if we underestimate or overestimate the level of services performed or the costs of these services, actual expenses could differ from our estimates. To date, we have not experienced any material differences between accrued costs and actual costs incurred.

We make payments in connection with clinical trials to contract manufacturing organizations ("CMOs") that manufacture the material for our product candidates and to clinical research organizations ("CROs") and clinical trial sites that conduct and manage our clinical trials. The financial terms of these contracts are subject to negotiation, which vary by contract and may result in payments that do not match the periods over which materials or services are provided. Generally, these agreements set forth the scope of work to be performed at a fixed fee, unit price or on a time and materials basis. In the event we make advance payments for goods or services that will be used or rendered for future research and development activities, the payments are deferred and capitalized as a prepaid expense and recognized as expense as the goods are received or the related services are rendered. These payments are evaluated for current or long-term classification based on when they are expected to be realized.

Acquisition of In-Process Research and Development Assets

We measure and recognize acquired in-process research and development assets, which include licenses, know-how, patents, and transaction fees, based on the cost to acquire the assets and the consideration is allocated to the items based on a relative fair value methodology. Goodwill is not recognized in asset acquisitions. If acquired in-process technology is determined to not have an alternative future use, the cost is charged to research and development expenses at the acquisition date.

Patent Costs

We expense patent costs as incurred for filing, prosecuting, and maintaining patents and patent applications, including certain of the patents and patent applications that we license from third parties. We classify these costs as general and administrative expenses in our consolidated statements of operations and comprehensive loss. In addition, we are entitled to receive reimbursement from third parties for a portion of the filing, prosecution, and maintenance costs for certain patents and patent applications. We accrue for these reimbursements as the respective expenses are incurred, and we classify such reimbursements as a reduction of general and administrative expenses. During the years ended December 31, 2023 and 2022, we incurred gross patent costs of $4.3 million and $7.3 million, respectively. During the years ended December 31, 2023 and 2022, we recorded $1.5 million and $3.5 million, respectively, of patent cost reimbursements as a credit to general and administrative expenses.

Stock-Based Compensation Expense

Stock-based compensation expense related to awards to employees is measured at the grant date based on the fair value of the award. We determine the grant-date fair value of the options using the Black-Scholes option-pricing model. The fair value of restricted stock units ("RSUs") and performance-based RSUs ("PSUs") awards is determined based on the number of units granted and the closing price of our common stock as of the grant-date. The fair value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the requisite service period of the awards, which is generally the vesting period, and is adjusted for pre-vesting forfeitures in the period in which the forfeitures occur.

We use the Black-Scholes valuation model as the method for determining the estimated fair value of stock options and stock purchases under our 2021 Employee Stock Purchase Plan ("ESPP") with the following assumptions:

Fair Market Value of Common Stock — Prior to our Initial Public Offering ("IPO"), the fair market value of our common stock was determined by our board of directors with assistance from management and external valuation experts. Our approach to estimating the fair market value of our common stock was consistent with the methods outlined in the American Institute of Certified Public Accountants' Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation. Following our IPO, the fair market value of our common stock is based on its closing price on Nasdaq as reported on the date of the stock option grant.

Expected Term — Expected term represents the period that our stock-based awards are expected to be outstanding and is determined using the simplified method. The expected term for our stock purchases under our ESPP is the offering period.

Expected Volatility — Expected volatility is estimated based on the average historical volatilities of common stock of comparable publicly traded entities over a period equal to the expected term of the stock option grants, as we do not have sufficient trading history for our common stock. Comparable companies are chosen based on their size, stage in the life cycle, or area of specialty. We will continue to apply this process for stock options and ESPP stock purchases until enough historical information regarding the volatility of our stock price becomes available.

Expected Dividends — Expected dividends is zero as we have never paid dividends on our common stock and have no plans to do so for the foreseeable future.

Risk-Free Interest Rate — Risk-free interest rate is based on the U.S. Treasury zero-coupon issued in effect at the time of grant for periods corresponding with the expected term of the award.

Income Taxes

We account for income taxes using the asset and liability method. We recognize deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the consolidated financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. Tax benefits related to uncertain tax positions are recognized when it is more likely than not that a tax position will be sustained during an audit. Interest and penalties related to unrecognized tax benefits are included within the provision for income tax.

Other Income, net

We recognize fees earned from sources not considered to be within the normal course of business in other income within the statements of operations and comprehensive loss. During the years ended December 31, 2023 and 2022, we recognized $15.3 million and $4.6 million of interest income from our short-term and long-term marketable securities, respectively.

Comprehensive Loss

Comprehensive loss is composed of net loss and other comprehensive income (loss). Other comprehensive income (loss) consists of unrealized gains and losses on available-for-sale marketable securities.

Net Loss Per Share

Basic net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding during the period, without consideration of potential dilutive securities. Diluted net loss per share is computed by dividing the net loss by the sum of the weighted-average number of common shares outstanding during the period plus the dilutive effects of potentially dilutive securities outstanding during the period. Potentially dilutive securities include common stock options, RSUs issued and outstanding. For all periods presented, diluted net loss per share is the same as basic net loss per share since the effect of including potential common shares is anti-dilutive.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by FASB or other standard-setting bodies and adopted are by us as of the specified effective date.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments (Topic 326). This ASU provides guidance on the measurement of credit losses for most financial assets and certain other instruments that are not measured at fair value through net income. ASU 2016-13 replaces the current incurred loss impairment approach with a methodology to reflect expected credit losses and requires consideration of a broader range of reasonable and supportable information to explain credit loss estimates. This ASU is to be applied on a modified retrospective approach and is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2022. Early adoption is permitted for all entities for fiscal years beginning after December 15, 2018, and interim periods therein. We adopted ASU 2016-13 on January 1, 2023. The impact of ASU 2016-13 on our financial statements and related disclosures was not material.

New Accounting Pronouncements Not Yet Adopted

In October 2023, the FASB issued ASU 2023-06, Disclosure Improvements: Codification Amendments in Response to the SEC's Disclosure Update and Simplification Initiative. This ASU aligns the requirements in the ASC to the removal of certain disclosure requirements set out in Regulation S-X and Regulation S-K, announced by the U.S. Securities and Exchange Commission ("SEC"). The effective date for each amended topic in the ASC is either the date on which the SEC's removal of the related disclosure requirement from Regulation S-X or Regulation S-K becomes effective, or on June 30, 2027, if the SEC has not removed the requirements by that date. Early adoption is prohibited. We are currently evaluating the impact of the adoption of this standard.

In November 2023, the FASB issued ASU 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures. This ASU requires public entities to disclose information about their reportable segments' significant expenses and other segment items on an interim and annual basis. Public entities with a single reportable segment are required to apply the disclosure requirements in ASU 2023-07, as well as all existing segment disclosures and reconciliation requirements in ASC 280 on an interim and annual basis. ASU 2023-07 is effective for fiscal years beginning after December 15, 2023, and for interim periods within fiscal years beginning after December 15, 2024, with early adoption permitted. We are currently evaluating the impact of the adoption of this standard.

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures. This ASU requires public entities, on an annual basis, to provide disclosure of specific categories in the rate reconciliation, as well as disclosure of income taxes paid disaggregated by jurisdiction. ASU 2023-09 is effective for fiscal years beginning after December 15, 2024, with early adoption permitted. We are currently evaluating the impact the adoption of this standard.

Emerging Growth Company and Smaller Reporting Company Status

We are an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 Act ("JOBS" Act"). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until such time as those standards apply to private companies. We have elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that we (a) are no longer an emerging growth company or (b) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may not be comparable to those of companies that comply with the new or revised accounting pronouncements as of public company effective dates.

We expect to use the extended transition period for any other new or revised accounting standards during the period in which we remain an emerging growth company. We have early adopted certain accounting standards because the JOBS Act does not preclude an emerging growth company from adopting a new or revised accounting standard earlier than the time that such standard applies to private companies to the extent early adoption is allowed by the accounting standard.

We are also a "smaller reporting company." If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most

recent fiscal years of audited consolidated financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

3. Fair Value Measurements and Fair Value of Financial Instruments

The authoritative guidance on fair value measurements establishes a three-tier fair value hierarchy for disclosure of fair value measurements as follows:

Level 1—Quoted prices in active markets for identical assets or liabilities.

Level 2—Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

Assets and liabilities measured at fair value are classified in their entireties based on the lowest level of input that is significant to the fair value measurement. Our assessment of the significance of a particular input to the fair value measurement in its entirety requires our management to make judgments and consider factors specific to the asset or liability.

Our financial instruments consist of Level 1, Level 2, and Level 3 financial instruments. We generally classify our marketable securities as Level 1 or Level 2. Instruments are classified as Level 2 when observable market prices for identical securities that are traded in less active markets are used. When observable market prices for identical securities are not available, such instruments are priced using benchmark curves, benchmarking of like securities, sector groupings, matrix pricing, and valuation models. These valuation models are proprietary to the pricing providers or brokers and incorporate a number of inputs, including in approximate order of priority: benchmark yields, reported trades, broker/dealer quotes, issuer spreads, two-sided markets, benchmark securities, bids, offers, and reference data including market research publications. For certain security types, additional inputs may be used, or some of the standard inputs may not be applicable. Evaluators may prioritize inputs differently on any given day for any security based on market conditions, and not all inputs listed are available for use in the evaluation process for each security valuation on any given day. Changes in the ability to observe valuation inputs may result in a reclassification of levels of certain securities within the fair value hierarchy. We recognize transfers into and out of levels within the fair value hierarchy in the period in which the actual event or change in circumstances that caused the transfer occurs. No such transfers occurred during the years ended December 31, 2023 and 2022. Level 1 financial instruments are comprised of money market fund investments and U.S. Treasury bills. Level 2 financial instruments are comprised of commercial paper, corporate debt securities, and U.S. government agency bonds. Financial assets and liabilities are considered Level 3 when their fair values are determined using pricing models, discounted cash flow methodologies, or similar techniques, and at least one significant model assumption or input is unobservable. Level 3 financial instruments consist of the MSKCC success payments liability.

The following table sets forth our financial instruments that were measured at fair value on a recurring basis by level within the fair value hierarchy (in thousands):

	Fair Value Measurements as of December 31, 2023			
	Total	Level 1	Level 2	Level 3
Assets:				
U.S. Treasury bills ($23,527 included in cash and cash equivalents)	$ 262,439	$ 262,439	$ —	$ —
Commercial paper ($9,759 included in cash and cash equivalents)	40,373	—	40,373	—
U.S. government agency bonds	40,185	—	40,185	—
Money market fund investments (included in cash and cash equivalents)	17,876	17,876	—	—
Corporate debt securities	11,531	—	11,531	—
Total fair value of assets	$ 372,404	$ 280,315	$ 92,089	$ —
Liabilities:				
MSKCC success payments liability	$ 2,939	$ —	$ —	$ 2,939
Total fair value of liabilities	$ 2,939	$ —	$ —	$ 2,939

	Fair Value Measurements as of December 31, 2022			
	Total	Level 1	Level 2	Level 3
Assets:				
Commercial paper ($26,669 included in cash and cash equivalents)	$ 96,899	$ —	$ 96,899	$ —
U.S. Treasury bills	91,966	91,966	—	—
U.S. government agency bonds ($3,976 included in cash and cash equivalents)	63,659	—	63,659	—
Corporate debt securities	36,819	—	36,819	—
Money market fund investments (included in cash and cash equivalents)	27,693	27,693	—	—
Total fair value of assets	$ 317,036	$ 119,659	$ 197,377	$ —
Liabilities:				
MSKCC success payments liability	$ 1,651	$ —	$ —	$ 1,651
Total fair value of liabilities	$ 1,651	$ —	$ —	$ 1,651

The fair value and amortized cost of cash equivalents and available-for-sale marketable securities by major security type as of December 31, 2023 and 2022 are presented in the following tables (in thousands):

	As of December 31, 2023			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Estimated Fair Value
U.S. Treasury bills ($23,527 included in cash and cash equivalents)	$ 262,328	$ 331	$ (220)	$ 262,439
Commercial paper ($9,759 included in cash equivalents)	40,386	—	(13)	40,373
U.S. government agency bonds	40,295	1	(111)	40,185
Money market fund investments (included in cash equivalents)	17,876	—	—	17,876
Corporate debt securities	11,489	50	(8)	11,531
Total cash equivalents and marketable securities	$ 372,374	$ 382	$ (352)	$ 372,404

Classified as:	
Cash and cash equivalents	$ 51,162
Marketable securities, short-term	277,665
Marketable securities, long-term	43,577
Total cash equivalents and marketable securities	$ 372,404

	As of December 31, 2022			
	Amortized Cost Basis	Unrealized Gains	Unrealized Losses	Estimated Fair Value
Commercial paper ($26,669 included in cash equivalents)	97,024	6	(131)	96,899
U.S. Treasury bills	92,910	1	(945)	91,966
U.S. government agency bonds (3,976 included in cash and cash equivalents)	63,926	25	(292)	63,659
Corporate debt securities	37,002	—	(183)	36,819
Money market fund investments (included in cash equivalents)	$ 27,693	$ —	$ —	$ 27,693
Total cash equivalents and marketable securities	$ 318,555	$ 32	$ (1,551)	$ 317,036

Classified as:	
Cash equivalents	$ 58,338
Marketable securities, short-term	189,325
Marketable securities, long-term	69,373
Total cash equivalents and marketable securities	$ 317,036

During the years ended December 31, 2023 and 2022, we reviewed our impaired marketable securities and concluded that the decline in fair value was not related to credit losses and is recoverable. Accordingly, no allowance for credit losses was recorded and instead the unrealized losses are reported as a component of accumulated other comprehensive loss.

The following table presents the fair value of available-for-sale marketable securities by contractual maturities (in thousands):

	December 31, 2023
Due in less than one year	$ 277,665
Due in one to five years	43,577
Total	$ 321,242

The following table sets forth a summary of the changes in the fair value of our Level 3 financial liability (in thousands):

	MSKCC Success Payments Liability
Balance at December 31, 2021	$ 4,080
Change in fair value	(2,429)
Balance at December 31, 2022	$ 1,651
Change in fair value	1,288
Balance at December 31, 2023	$ 2,939

Our liability for the MSKCC success payments is carried at fair value and changes are recognized as expense or income as part of other income (expense) until the success payments liability is paid or expires (Note 4).

The table below summarizes key assumptions used in the valuation of MSKCC success payments liability:

	As of December 31, 2023	As of December 31, 2022
Fair value of common stock	$ 5.73	$ 6.28
Risk-free interest rate	3.88%	3.88%
Expected volatility	79%	79%
Probability of achieving multiple of Initial Share Price[(1)]	5.2% to 18.1%	3.0% to 10.6%
Expected term (years)	3.7 to 5.2	4.6 to 6.0

[(1)]MSKCC is entitled to certain success payments if our common stock fair value increases by certain multiples of value based on a comparison of the fair market value of our common stock to $5.1914 per share, adjusted for any future stock splits ("Initial Share Price"), during a specified time period (Note 4).

The computation of expected volatility was estimated using a combination of available information about the historical volatility of stocks of similar publicly traded companies for a period matching the expected term assumption and the historical and implied volatility of our stock. The risk-free interest rate, expected volatility, and expected term assumptions depend on the initiation of our AMpLify phase 1 clinical trial for our CB-012 product candidate utilizing the know-how, biological materials, and intellectual property licensed under the Exclusive License Agreement, dated November 13, 2020, with MSKCC ("MSKCC Agreement") and the estimated timing of marketing approval for this product candidate from the U.S. Food and Drug Administration ("FDA"). In addition, we incorporated the estimated number and timing of valuation measurement dates in the calculation of the MSKCC success payments liability.

4. Significant Agreements

The Regents of the University of California and the University of Vienna

We entered into an Exclusive License Agreement, dated April 16, 2013 (as amended, "UC/Vienna Agreement") with The Regents of the University of California ("UC") and the University of Vienna ("Vienna") (together, "UC/Vienna") wherein UC/Vienna granted us an exclusive worldwide license, with the right to sublicense, in all fields to the foundational

CRISPR-Cas9 patent family co-owned by UC, Vienna, and Dr. Emmanuelle Charpentier ("CVC IP"). Dr. Charpentier has not granted us any rights, either directly or indirectly. The UC/Vienna Agreement continues until the last-to-expire patent or last-to-be-abandoned patent application within the CVC IP; provided, however, that UC/Vienna may terminate the UC/Vienna Agreement upon the occurrence of certain events and we may terminate the UC/Vienna Agreement at our sole discretion upon written notice. Without patent term adjustment ("PTA") or patent term extension ("PTE"), the CVC IP will expire in 2033. The UC/Vienna Agreement includes certain diligence milestones that we must meet. For products and services sold by us that are covered by the CVC IP, we will owe low- to mid-single-digit percent royalties on net sales, subject to a minimum annual royalty. Prior to the time that we are selling products, we owe UC/Vienna an annual license maintenance fee. We may owe UC/Vienna up to $3.4 million in certain regulatory and clinical milestone payments in the field of human therapeutics and diagnostics for products that are covered by the CVC IP and developed by us, an affiliate, or a sublicensee. Additionally, we pay UC/Vienna a specified percentage of sublicensing revenue, including cash and equity, we receive from sublicensing the CVC IP, subject to certain exceptions. If we include intellectual property owned or controlled by us in a sublicense to the CVC IP, we pay UC/Vienna a low double-digit percentage of sublicensing revenues received under the sublicense. If we do not include intellectual property owned or controlled by us in a sublicense to the CVC IP, we pay UC/Vienna 50% of sublicensing revenues received under the sublicense. To date, we have entered into over 25 sublicensing agreements in a variety of fields such as human therapeutics, forestry, agriculture, research reagents, transgenic animals, certain livestock targets, internal research, bioproduction, cell lines, and microbial applications that include the CVC IP as well as other Cas9 intellectual property owned or controlled by us. We are obligated to reimburse UC for its prosecution and maintenance costs of the CVC IP.

For the years ended December 31, 2023 and 2022, we incurred $1.6 million and $1.1 million, respectively, for payments we owe to UC related to sublicensing revenues, which we recorded in research and development expenses in our consolidated statements of operations and comprehensive loss.

For the years ended December 31, 2023 and 2022, we reimbursed UC $2.3 million and $5.4 million, respectively, for prosecution and maintenance costs of the CVC IP, which were recorded in general and administrative expenses in our consolidated statements of operations and comprehensive loss.

On December 15, 2016, we entered into a Consent to Assignments, Licensing and Common Ownership and Invention Management Agreement ("IMA") relating to the CVC IP. Under the IMA, CRISPR Therapeutics AG ("CRISPR") reimburses us 50% of the amounts we reimburse UC for patent prosecution and maintenance costs of the CVC IP. For the years ended December 31, 2023 and 2022, CRISPR reimbursed us $1.1 million and $2.7 million, respectively, which we recorded as reductions of general and administrative expenses in our consolidated statements of operations and comprehensive loss.

Memorial Sloan Kettering Cancer Center

On November 13, 2020, we entered into the MSKCC Agreement, under which we exclusively licensed know-how, biological materials, and patent families relating to fully-human single-chain variable fragments targeting C-type lectin-like molecule-1 ("CLL-1"; also known as CD371) for use in T cells, NK cells, and genome-edited induced pluripotent stem cells ("iPSCs") for allogeneic CLL-1-targeted cell therapies (currently used in our CB-012 product candidate). We paid MSKCC an upfront payment of $0.5 million in cash and $2.1 million in stock. For each licensed CLL-1 product, we may owe potential clinical, regulatory, and commercial milestone payments totaling $112.0 million. In addition, in the event we, our affiliates, or sublicensees, receive regulatory approval for a licensed CLL-1 product, we will owe low- to mid-single-digit percent royalties on net sales by us, our affiliates, and our sublicensees. Our license from MSKCC includes the right to sublicense through multiple tiers and we will owe MSKCC a percentage of upfront cash or equity received from our sublicensees. The percentage owed decreases as our licensed CLL-1 product candidate moves through development, starting at a low-double-digit percentage if clinical trials have not yet begun and decreasing to a mid-single-digit percentage if our licensed CLL-1 product candidate is in later clinical trial stages. We are also responsible for paying a percentage of licensed patent costs. The MSKCC Agreement includes certain diligence milestones that we must meet by specified dates, which may be extended upon payment of additional fees.

MSKCC is entitled to certain success payments if our common stock fair value increases by certain multiples of increasing value based on a comparison of the fair market value of our common stock to $5.1914 per share, adjusted for any future stock splits (the "Initial Share Price"), during a specified time period. Under the MSKCC Agreement, as a publicly traded company, our common stock fair value is determined by any given 45-day volume weighted-average trading price. At our option, success payments to MSKCC may be made in cash or common stock. The relevant time period commences when the first patient is dosed with the first licensed CLL-1 product candidate (CB-012) in the first phase 1 clinical trial and ends upon the earlier of the third anniversary from the approval of our, or our affiliate's, or sublicensee's

biologics license application ("BLA") by the FDA or 10 years from the date the first patient was dosed with a licensed CLL-1 product candidate in the first phase 1 clinical trial. The aggregate success payments will not exceed $35.0 million. Additionally, if we undergo a change of control during the specified time period, we may owe a change of control payment, depending upon the increase in our stock price due to the change of control and also to what extent success payments have already been paid by us to MSKCC. In no event will the combination of success payments and the change of control payment owed to MSKCC exceed $35.0 million.

The following table summarizes the amounts of the MSKCC success payments:

Multiple of Initial Share Price giving rise to a success payment	5x	10x	15x
MSKCC success payments (in millions)	$ 10.0	$ 10.0	$ 15.0

We may terminate the MSKCC Agreement upon 90 calendar days' prior written notice to MSKCC. MSKCC may terminate the MSKCC Agreement in the event of our uncured material breach, bankruptcy, or criminal activity. If MSKCC materially breaches the MSKCC Agreement in certain circumstances (e.g., granting a third party a license in our field) then, during the time of such uncured breach, MSKCC will not be entitled to receive any success payments or any change of control payment.

As of December 31, 2023 and 2022, the estimated fair value of the total success payments obligation to MSKCC was $2.9 million and $1.7 million, respectively, which was included in long-term liabilities in our consolidated balance sheets.

Intellia Therapeutics, Inc.

On July 16, 2014, we entered into a License Agreement (as amended, "Intellia License Agreement") with Intellia, LLC, to which Intellia Therapeutics, Inc. ("Intellia") is a successor in interest. Under the Intellia License Agreement, we granted Intellia an exclusive worldwide license, with the right to sublicense, to certain CRISPR-Cas9 technology for a defined field of human therapeutics. Intellia granted us an exclusive worldwide license, with the right to sublicense, to certain of its CRISPR-Cas9 technology for all fields outside of the defined field of human therapeutics. Under the Intellia License Agreement, each party is responsible for 30% of the other party's expenses for prosecution and maintenance of the licensed intellectual property.

During each of the years ended December 31, 2023 and 2022, we recognized less than $0.1 million of expenses in reimbursable patent prosecution and maintenance costs, which were recorded as general and administrative expenses in our consolidated statements of operations and comprehensive loss. During each of the years ended December 31, 2023 and 2022, Intellia reimbursed us $0.4 million and $0.8 million, respectively (including reimbursement for a portion of the patent prosecution and maintenance costs of the CVC IP paid to UC), which were recorded as reductions of general and administrative expenses in our consolidated statements of operations and comprehensive loss. The term of the Intellia License Agreement continues for the life of the licensed patents and patent applications; provided, however, either party may terminate the agreement upon the occurrence of certain events.

On June 16, 2021, we entered into a leaseback agreement with Intellia ("Leaseback Agreement"). Pursuant to the Leaseback Agreement, in exchange for Intellia's grant to us of an exclusive license to certain intellectual property relating to CRISPR-Cas9, including Cas9 chRDNAs, for use solely in the manufacture of our CB-010 product candidate, we paid Intellia an upfront cash payment of $1.0 million and will pay up to $23.0 million in potential future regulatory and sales milestones. Additionally, we will owe Intellia low- to mid- single-digit percent royalties on net sales of our CB-010 product candidate by us, our affiliates, and sublicensees until the expiration, abandonment, or invalidation of the last patent within the intellectual property relating to CRISPR-Cas9, including that relating to Cas9 chRDNAs (i.e., 2036, without PTA or PTE).

Pioneer Hi-Bred International, Inc. (now Corteva Agriscience)

On July 13, 2015, we and Pioneer Hi-Bred International, Inc. ("Pioneer") (now Corteva Agriscience), then a DuPont company ("DuPont"), entered into an Amended and Restated Collaboration and License Agreement (as amended, "Pioneer Agreement"). Under the terms of the Pioneer Agreement, we and Pioneer cross licensed CRISPR intellectual property portfolios. Pioneer granted us an exclusive worldwide license, with the right to sublicense, to its CRISPR intellectual property in the field of research tools, as well as a non-exclusive worldwide license to such intellectual property in human and animal therapeutics, industrial biotechnology, certain agriculture segments, and other fields; and we granted

Pioneer an exclusive worldwide license, with the right to sublicense, to our CRISPR intellectual property, including the CVC IP, in a defined field of agriculture relating to specified row crops, as well as a non-exclusive worldwide license to the intellectual property in other agricultural applications, industrial biotechnology, nutrition and health, and other fields. The Pioneer Agreement continues until the expiration, abandonment, or invalidation of the last patent or patent application within the licensed intellectual property; provided, however, that the parties may terminate the Pioneer Agreement by mutual consent or either party may unilaterally terminate the Pioneer Agreement in the event of an uncured breach of a payment obligation, bankruptcy, or failure to maintain or own licensed intellectual property by the other party if the non-breaching party is materially adversely affected by the failure. We are obligated to pay low-single-digit percent royalties to Pioneer for the sales of our products in the research tools field as well as certain sublicensing revenues in that field. We are eligible to receive milestone payments from Pioneer if certain regulatory and commercial milestones are met related to specified row crops, for a total of up to $22.4 million, as well as to receive low-single-digit percent royalties for sales of defined agricultural products and certain sublicensing revenues in that field. Initially, Pioneer owned the patents and patent applications developed under the collaboration, including the chRDNA patent family, and granted us an exclusive license to these patents and patent applications in the fields of research tools and therapeutics.

In December 2020, we and Pioneer entered into an amendment to the Pioneer Agreement under which Pioneer assigned to us the chRDNA patent family developed under the research collaboration, and we paid Pioneer an upfront payment of $0.5 million. We considered the payment to Pioneer in accordance with revenue recognition guidance and accounted for it as a reduction of the licensing and collaboration revenue in our consolidated statements of operations and comprehensive loss. In addition to the upfront payment, we are now obligated to pay all patent prosecution and maintenance costs for the chRDNA patent family; up to $2.8 million in regulatory milestone payments for therapeutic products developed by us, our affiliates, or licensees that are covered by the chRDNA patent family; up to $20.0 million in sales milestones over a total of four therapeutics products sold by us, our affiliates, or licensees that are covered by the chRDNA patent family; and a low-single-digit percentage of licensing revenue we receive for licensing the chRDNA patent family after December 2020.

During the year ended December 31, 2023 we incurred no liability for payments owed to Pioneer for licensing revenues. During the year ended December 31, 2022, we incurred $0.1 million, for payments we owe to Pioneer related to licensing revenues, which we recorded as a research and development expense in our consolidated statements of operations and comprehensive loss.

AbbVie Manufacturing Management Unlimited Company

On February 9, 2021, we entered into a Collaboration and License Agreement (as amended, "AbbVie Agreement") with AbbVie Manufacturing Management Unlimited Company ("AbbVie"). Pursuant to the AbbVie Agreement, AbbVie selected one target or, for a dual CAR-T cell product, two targets (each selection, a "Program Slot") to develop collaboration CAR-T cell products (and corresponding licensed products). Under the terms of the AbbVie Agreement, we conducted certain preclinical research and development activities under the collaboration. AbbVie reimbursed us for all such activities, including reimbursement for time spent by employees at a designated rate. On September 26, 2023, we received notice from AbbVie that AbbVie elected to terminate the AbbVie Agreement. By mutual agreement with AbbVie, termination of the AbbVie Agreement became effective on October 25, 2023.

The transaction price we received under the AbbVie Agreement associated with the first two Program Slots consisted of a $30.0 million upfront, non-refundable and non-creditable, cash payment and the estimated variable consideration related to our performance of preclinical research, development, and manufacturing activities under the collaboration and the developmental and regulatory milestone payments. We constrain the estimated variable consideration if we assess that it is probable that a significant reversal in the amount of cumulative revenue recognized may occur in future periods. The transaction price was reevaluated at the end of each reporting period and as changes in circumstances occurred. We determined that the licenses we granted to AbbVie and our participation in the joint governance committee were not capable of being distinct from the preclinical research, development, and manufacturing activities and therefore were combined into one performance obligation. We recognized revenue based on the measure of progress using an estimated cost-based input method each reporting period.

Upon to receipt of the termination notice, we stopped performing preclinical research and development services under the AbbVie Agreement and determined that our performance obligation to AbbVie was substantially completed as of September 30, 2023. Consequently, the remaining $20.8 million of deferred revenue from the $30.0 million upfront cash payment was recognized upon satisfaction of the performance obligation during the year ended December 31 2023.

We had no long-term or short-term deferred revenue related to the upfront cash payment in our consolidated balance sheets as of December 31, 2023. We had short-term deferred revenue of $9.4 million and long-term deferred revenue of $13.3 million related to the upfront cash payment in our consolidated balance sheets as of December 31, 2022.

During the year ended December 31, 2023, we recognized $24.8 million in licensing and collaboration revenue associated with the AbbVie Agreement, of which $22.7 million had been included in deferred revenue as of the beginning of the period. During the year ended December 31, 2022, we recognized $8.0 million in licensing and collaboration revenue associated with the AbbVie Agreement. As of December 31, 2023 and 2022, we had no amounts recorded in accounts receivable in our consolidated balance sheets. As of December 31, 2023, we had no contract assets in our consolidated balance sheets. As of December 31, 2022, we had $0.9 million in contract assets in our consolidated balance sheets.

5. Revenue

Disaggregation of Revenue

We disaggregate revenue by geographical market based on the location of research and development activities of our licensees and collaborators. The following table is a summary of revenue by geographic location for the years ended December 31, 2023 and 2022, (in thousands):

	Years Ended December 31,	
	2023	2022
United States	$ 32,770	$ 13,303
Rest of world	1,707	548
Total	$ 34,477	$ 13,851

During the year ended December 31, 2023, we recognized $8.4 million of revenue related to performance obligations satisfied at a point in time, and we recognized $26.1 million of revenue related to performance obligations satisfied over time that included $24.8 million in licensing and collaboration revenue associated with the AbbVie Agreement, of which $22.7 million had been included in deferred revenue as of the beginning of the period.

During the year ended December 31, 2022, we recognized $5.9 million of revenue related to performance obligations satisfied at a point in time, and we recognized $8.0 million of revenue related to performance obligations satisfied over time.

Contract Balances

Accounts receivable relate to our right to consideration for performance obligations completed (or partially completed) for which we have an unconditional right to consideration. Our accounts receivable balances represent amounts that we billed to our licensees with invoices outstanding as of the end of a reporting period.

Contract assets are rights to consideration in exchange for a license that we have granted to a licensee when the right is conditional on something other than the passage of time. Our contract asset balances represent reimbursable research costs related to the AbbVie Agreement, as well as royalties and milestone payments from our other license agreements that are unbilled as of the end of a reporting period.

Contract liabilities consist of deferred revenue and relate to amounts invoiced to, or advance consideration received from, licensees that precede our satisfaction of the associated performance obligations. As of December 31, 2023, our deferred revenue balance primarily resulted from the upfront payment received relating to our performance obligation to Pfizer, Inc. (“Pfizer”). As of December 31, 2022 our deferred revenue balance primarily result from the upfront payment received relating to our performance obligations under the now-terminated AbbVie Agreement. The remaining deferred revenue relates to upfront payments received under license agreements that also include nonrefundable annual license fees, which are accounted for as material rights for license renewals and are recognized at the point in time annual license fees are paid by the licensees and the renewal periods begin.

The following table presents changes in our contract assets and liabilities during the year ended December 31, 2023 (in thousands):

	Balance as of December 31, 2022	Additions	Deductions	Balance as of December 31, 2023
Accounts receivable	$ 202	$ 10,819	$ (10,873)	$ 148
Contract assets:				
Unbilled accounts receivable	$ 2,247	$ 6,006	$ (6,828)	$ 1,425
Contract liabilities:				
Deferred revenue, current and long-term	$ 25,891	$ 12,981	$ (29,923)	$ 8,949

Unbilled accounts receivable decreased during the year ended December 31, 2023, primarily due to the decrease in unbilled research costs under the AbbVie Agreement.

Deferred revenue decreased during the year ended December 31, 2023, primarily due to the recognition of deferred revenues related to the satisfaction of our performance obligation to AbbVie as a result of AbbVie's termination of the AbbVie Agreement, offset by the $7.5 million allocated to the Pfizer information sharing committee (Notes 4 and 7).

During the years ended December 31, 2023 and 2022, we recognized $23.2 million and $5.0 million of revenue, respectively, which was included in the opening contract liabilities balances at the beginning of the respective periods.

Transaction Prices Allocated to Remaining Performance Obligations

Remaining performance obligations represent in aggregate the amount of a transaction price that has been allocated to performance obligations not delivered as of the end of a reporting period. The value of transaction prices allocated to remaining unsatisfied performance obligations as of December 31, 2023 and 2022 were approximately $8.9 million and $40.4 million, respectively. We expect to recognize approximately $2.8 million of remaining performance obligations as revenue in the next 12 months and to recognize the remainder thereafter.

Capitalized Contract Acquisition Costs and Fulfillment Costs

We did not incur any expenses to obtain license and collaboration agreements, and costs to fulfill those contracts do not generate or enhance our resources. As such, no costs to obtain or fulfill a contract have been capitalized in any period.

6. Balance Sheet Items

Other receivables consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Patent cost reimbursements	$ 1,403	$ 1,638
Accrued interest on marketable securities	702	570
Other	181	7
Total	$ 2,286	$ 2,215

Prepaid expenses and other current assets consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Prepaid contract manufacturing and clinical costs	$ 3,942	$ 4,803
Prepaid income taxes	—	431
Prepaid insurance	993	1,568
Other	1,220	1,119
Total	$ 6,155	$ 7,921

Property and equipment, net, consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Lab equipment	$ 15,581	$ 12,588
Leasehold improvements	2,235	1,876
Computer equipment	895	709
Furniture and office equipment	499	161
Construction in progress	8,204	993
Total property and equipment	27,414	16,327
Less accumulated depreciation and amortization	(9,144)	(5,649)
Property and equipment, net	$ 18,270	$ 10,678

Depreciation and amortization expenses related to property and equipment were $3.5 million and $1.6 million, for the years ended December 31, 2023, and 2022, respectively.

Accrued expenses and other current liabilities consisted of the following (in thousands):

	December 31, 2023	December 31, 2022
Accrued employee compensation and related expenses	9,517	5,752
Accrued research and development expenses	8,720	6,731
Accrued patent expenses	613	1,331
Accrued expenses related to sublicensing revenues	802	596
Credit card liability	377	299
Other	1,106	1,370
Total	$ 21,135	$ 16,079

7. Related Party Transactions

Edge Animal Health

On May 15, 2020, we entered into an Exclusive License Agreement for Veterinary Therapeutics (as amended, "Edge chRDNA License Agreement") with Edge Animal Health ("Edge"), a private company, related party, under which we granted Edge an exclusive worldwide license to Cas9 and Cas12a chRDNA intellectual property rights and know-how in the defined field of veterinary therapeutics. As consideration for this exclusive license, Edge issued to us 7,500,000 shares of convertible preferred stock with an estimated fair value of $7.5 million, which was the price paid for similar shares by another investor, and which was an arm's length transaction. This represents a material voting interest in Edge and entitles us to hold one of the four board of director seats. As of December 31, 2023, we had appointed one of the four Edge directors. We concluded that Edge is a variable interest entity and that we are not its primary beneficiary based on our representation on its board of directors. As Edge's convertible preferred stock is not in substance common stock, we recorded this investment using the measurement alternative. As of each of December 31, 2023 and 2022, the carrying value

of the Edge investment was $7.5 million. There have been no changes to the carrying value of the investment during the years ended December 31, 2023 and 2022.

On May 16, 2023, we entered into an Exclusive License Agreement for Veterinary Therapeutics (CRISPR-Cas9) ("Edge Cas9 License Agreement"), under which we granted Edge an exclusive worldwide license to certain CRISPR-Cas9 intellectual property rights in the field of veterinary therapeutics. Previously, on May 15, 2020, we had entered into an Option for an Exclusive License under which Edge could exercise its option within three years upon payment of a total of $1.2 million, which Edge paid, and we entered into the Edge Cas9 License Agreement. We recognized $1.2 million of revenue in connection with the Edge Cas9 License Agreement during the twelve months ended December 31, 2023. We did not recognize any revenue in connection with the Edge Cas9 License Agreement in 2022.

Pfizer Investment

On June 29, 2023, we entered into a Securities Purchase Agreement ("Securities Purchase Agreement") with Pfizer, pursuant to which we, in a private placement transaction, issued and sold to Pfizer 4,690,431 shares of our common stock, par value $0.0001 per share, at a purchase price of $5.33 per share, for aggregate gross proceeds of approximately $25.0 million ("Pfizer Investment"). The issuance and sale of the shares to Pfizer closed on June 30, 2023. We granted certain registration rights to Pfizer under the Securities Purchase Agreement covering the resale of the shares. Unless otherwise agreed by Pfizer, we agreed to use the proceeds from the Pfizer Investment solely in connection with (i) the development program for our allogeneic anti-BCMA CAR-T cell therapy known as CB-011 that is being evaluated in our CaMMouflage clinical trial and/or (ii) any other single-targeted anti-BCMA CAR-T cell therapy using an anti-BCMA single-chain variable fragment owned or controlled by us (collectively, cell therapies described in clauses (i) and (ii) are referred to as a "BCMA Product Candidate"), for 36 months beginning on June 29, 2023.

On June 29, 2023, in connection with the Pfizer Investment, we and Pfizer also entered into an Information Rights Agreement, having a thirty-six (36)-month term. Under the Information Rights Agreement, we granted Pfizer a thirty (30)-calendar day right of first negotiation ("ROFN") if we commence or engage with any third party with respect to a potential grant of rights to develop and/or commercialize a BCMA Product Candidate, including, without limitation, a license agreement, a co-promotion/co-commercialization agreement, a profit share agreement, a joint venture agreement, or an asset sale agreement (a "Grant of Program Rights"). If we and Pfizer do not reach an agreement with respect to a Grant of Program Rights within the 30-day period, then we may pursue negotiations and enter into an agreement with any third party. If we and such third party do not reach agreement on the Grant of Program Rights within a specified time period, Pfizer's right of first negotiation will be reinstated. Under the Information Rights Agreement, we also agreed to grant Pfizer the right to designate one representative to serve on our scientific advisory board ("SAB"). Through an information sharing committee, we provide calendar quarter updates to Pfizer regarding the development program for a BCMA Product Candidate. Additionally, we agreed to provide Pfizer access to any preclinical or interim or final clinical data (including raw data) and results generated as part of the development program for a BCMA Product Candidate at the same time that we provide such data to a third party (other than to our service providers or the FDA or other regulatory authorities), subject to certain confidentiality exceptions.

On June 29, 2023, we and Pfizer also entered into a Voting Agreement, pursuant to which, for a period of 12 months, Pfizer agreed to cause our voting securities that Pfizer beneficially owns (within the meaning of Rules 13d-3 or 13d-5 under the Securities Exchange Act of 1934, as amended ("Exchange Act")) in excess of 4.99% of our then issued and outstanding voting securities to be voted (i) with respect to any matter directly relating to remuneration of directors, directors' insurance, or indemnification or release from liability of directors, in a manner proportionally consistent with the votes properly cast for and against by holders of voting securities not beneficially owned by Pfizer, and (ii) with respect to any other matter in which Pfizer shall have the right to vote such voting securities, in accordance with the recommendation of our board of directors or any applicable committee thereof.

We recorded the issuance of our common stock at its estimated fair value of $17.5 million, which reflects a discount for the lack of marketability of the shares. The remaining $7.5 million of the aggregate purchase price was allocated to the Information Rights Agreement, which represented a contract with a customer under ASC 606. We concluded that the information sharing committee represents the only performance obligation under the Information Rights Agreement. The ROFN does not provide Pfizer with a material right and is therefore not a performance obligation.

We recognize revenue over time as the measure of progress which we believe best depicts the obligations to Pfizer. The information sharing committee will meet quarterly over the 36-month term of the Information Rights Agreement, which results in recognition of the transaction price over the 36-month term.

During the twelve months ended December 31, 2023, we recognized $1.2 million of revenue from Pfizer. As of December 31, 2023, there was approximately $6.2 million of related party deferred revenue ($2.5 million included in current liabilities and $3.7 million included in long-term liabilities) related to our performance obligation to Pfizer.

8. Leases

Operating Lease Obligations

We lease laboratory and office space under noncancellable operating agreements. In March 2021, we entered into a ten-year lease agreement, which superseded and replaced our prior lease, as amended, for our corporate headquarters and the new lease included additional office and laboratory space located within the same building in Berkeley, California. This lease agreement contains a renewal option for an additional term of five years. In addition to base rent, we pay our share of operating expenses and taxes.

In January 2022, we entered into a ten-and-a-half-year lease agreement for approximately 10,000 square feet of office and laboratory space in Berkeley, California, near our current corporate headquarters. In connection with signing this lease, we paid a deposit in the amount of $0.4 million to the lessor. This lease agreement contains an escalation clause for increased base rent over the term and a renewal option for an additional term of five years. In addition to base rent, we pay our share of operating expenses and taxes. To complete certain leasehold improvements, the lessor has agreed to provide us a tenant improvement allowance of $1.8 million. The leasehold improvements constructed are presented under property and equipment on our consolidated balance sheets and are depreciated on a straight-line basis over the shorter of remaining lease term or estimated useful life.

The components of lease costs, which are included in our statements of operations and comprehensive loss, were as follows (in thousands):

	Years Ended December 31,	
	2023	2022
Operating lease cost[(1)]	$ 7,628	$ 7,337
Short-term lease cost	250	83
Total lease cost	$ 7,878	$ 7,420

[(1)]Includes $2.5 million and $2.2 million of variable lease cost related to operating expenses and taxes for the years ended December 31, 2023, and 2022, respectively.

Supplemental information related to our leases was as follows (in thousands):

	Years Ended December 31,	
	2023	2022
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 3,732	$ 3,468

The following table summarizes the weighted-average remaining lease term and weighted-average discount rate for our corporate laboratory and office leases:

	Years Ended December 31,	
	2023	2022
Weighted-average remaining lease term (years)	7.4	8.3
Weighted-average discount rate	11.3 %	11.3 %

The following table summarizes a maturity analysis of our operating lease liabilities showing the aggregate lease payments as of December 31, 2023:

Year ending December 31:	(in thousands)
2024[1]	$ 3,485
2025	4,475
2026	5,720
2027	5,922
2028	6,122
Thereafter	15,993
Total future undiscounted lease payments	41,717
Less imputed interest	(14,609)
Total discounted lease payments	27,108
Less current portion of lease liability	(1,200)
Noncurrent portion of lease liability	$ 25,908

[1]Reflects an offset of $1.0 million related to incentives expected to be received in 2024.

9. Commitments and Contingencies

Research, Manufacturing, and License Agreements

We enter into various agreements in the ordinary course of business, such as those with CMOs, suppliers, CROs, clinical trial sites, licensors, assignors, and the like. These agreements provide for termination by either party in certain circumstances, generally with less than one-year notice and are, therefore, cancellable contracts and, if cancelled, are not anticipated to have a material effect on our consolidated financial condition, results of operations, or cash flows. Some of these agreements include contingent payments that will become payable if and when certain development, regulatory, clinical, and/or commercial milestones are achieved by us. As of December 31, 2023, the satisfaction and timing of such contingent payments is uncertain and is not reasonably estimable.

Guarantees and Indemnifications

In the normal course of business, we enter into agreements that contain a variety of representations and warranties and provide for certain indemnifications by us. Our exposure under these agreements is unknown because claims may be made against us in the future. To date, we have not paid any claims or been required to defend any action related to our indemnification obligations. As of each of December 31, 2023 and 2022, we did not have any material indemnification claims that were probable or reasonably possible, and consequently, we have not recorded related liabilities.

Litigation

From time to time, we may become involved in litigation arising in the ordinary course of business. We record a liability for such litigation when it is probable that future losses will be incurred and if such losses can be reasonably estimated. Significant judgment by us is required to determine both probability and the estimated amount.

On April 11, 2023, a putative class action lawsuit was filed in the U.S. District Court for the Northern District of California against our company and certain of our officers and current and former members of our board of directors, B*ergman v. Caribou Biosciences, Inc., et al.*, Case Number 4:23-cv-01742-YGR ("Bergman Case"). The Bergman complaint challenges disclosures regarding our company's business, operations, and prospects, specifically with respect to the alleged durability of CB-010's therapeutic effect and the product candidate's clinical and commercial prospects, in alleged violation of Sections 11 and 15 of the Securities Act of 1933, as amended ("Securities Act") and Sections 10(b) and 20(a) of the Exchange Act. On September 18, 2023, plaintiffs filed an amended complaint adding the IPO underwriters as defendants and making substantially the same allegations as the original complaint. On November 14, 2023, we filed a motion to dismiss the amended complaint for failure to state a claim. Motion to dismiss briefing was completed on February 21, 2024, and oral argument on the motion is scheduled for April 23, 2024. We intend to vigorously defend the claims asserted against us.

On March 22, 2023, a putative class action lawsuit was filed in Superior Court of the State of California for the County of Alameda against our company and certain of our officers and current and former members of our board of directors, *Lowry v. Caribou Biosciences, Inc., et al.*, Case Number T23-1084 ("Lowry Case"). The Lowry Case challenges disclosures regarding our company's business, operations, and prospects, specifically with respect to the alleged durability of CB-010's therapeutic effect and the product candidate's clinical and commercial prospects, in alleged violation of Sections 11 and 15 of the Securities Act. The allegations and claims in the Lowry Case are substantially similar to the Securities Act claims asserted in the Bergman Case. On April 26, 2023, we filed a motion to stay the Lowry Case during the pendency of the parallel federal court litigation in the Bergman Case, and, on July 11, 2023, our motion to stay was denied. On September 11, 2023, plaintiff filed an amended complaint making substantially the same allegations as the original complaint. On November 9, 2023, we filed a motion to dismiss the amended complaint on the grounds that our certification of incorporation mandates that Securities Act claims against us be brought in federal court. On February 28, 2024, the court granted our motion to dismiss and ordered the case dismissed.

10. Common Stock

Common stock reserved for future issuance, consisted of the following:

	As of December 31, 2023	As of December 31, 2022
Stock options, issued and outstanding	9,410,404	6,733,074
Stock options, authorized for future issuance	5,952,012	5,833,979
Stock available under our employee stock purchase plan	1,516,355	1,044,518
Unvested restricted stock units and performance-based restricted stock units	205,357	256,146
Total common stock reserved for future issuance	17,084,128	13,867,717

Shelf Registration Statement

On August 9, 2022, we filed a shelf registration statement on Form S-3 ("Shelf Registration Statement") with the SEC. The Shelf Registration Statement allows us to sell from time to time up to $400.0 million of common stock, preferred stock, debt securities, warrants, rights, or units comprised of any combination of these securities, for our own account in one or more offerings (including the $100.0 million of common stock reserved for our at-the-market equity offering program described below). The SEC declared the Shelf Registration Statement effective on August 16, 2022. The terms of any offering under the Shelf Registration Statement are established at the time of such offering as described in a prospectus supplement to the Shelf Registration Statement filed with the SEC prior to the completion of any such offering.

In July and August 2023, we issued and sold a total of 22,115,384 shares of our common stock in an underwritten follow-on public offering at a price to the public of $6.50 per share, which included the full exercise of the underwriters' right to purchase 2,884,615 additional shares of our common stock. The total gross proceeds from the offering were approximately $143.7 million ($134.4 million net of underwriting discounts and commissions and offering expenses). The shares were issued pursuant to the Shelf Registration Statement.

At-the-market Equity Offering Program

On August 9, 2022, we entered into an ATM Sales Agreement with Jefferies with respect to an at-the-market ("ATM") equity offering program, pursuant to which, through Jefferies as sales agent, we may from time to time, sell shares of our common stock having an aggregate offering price of up to $100.0 million in gross proceeds under the Shelf Registration Statement. As of December 31, 2023, we sold 168,635 shares of our common stock under the ATM Sales Agreement at an average price per share of $7.32 for aggregate gross proceeds of $1.2 million ($1.0 million net of offering expenses).

In February 2024, we sold 1,594,171 shares of our common stock under the ATM Sales Agreement, at an average price per share of $7.33 for aggregate gross proceeds of $11.7 million ($11.3 million, net of offering expenses).

11. Stock-Based Compensation

Equity Incentive Plans

In July 2021, our board of directors adopted and our stockholders approved the 2021 Equity Incentive Plan ("2021 Plan") that became effective on July 22, 2021. We reserved 5,200,000 shares of common stock for issuance under the 2021 Plan. In addition, 934,562 shares available for issuance under the 2013 Equity Incentive Plan, adopted in 2013 and amended and restated in 2019, were transferred into the 2021 Plan. In addition, any shares subject to awards under the 2013 Plan that terminate, expire, or lapse for any reason without the delivery of shares, or are reacquired or withheld (or not issued) to satisfy a tax withholding obligation or the purchase or exercise price, will be added to the 2021 Plan. The 2021 Plan also provides that the number of shares initially reserved and available for issuance will automatically increase each January 1, beginning on January 1, 2022 and ending on January 1, 2031, by an amount equal to the lesser of (a) 5% of the shares of common stock outstanding on the last day of the immediately preceding fiscal year, and (b) such smaller number of shares of stock as determined by our board of directors. No more than 56,000,000 shares of stock may be issued upon the exercise of incentive stock options under the 2021 Plan. Options under the 2021 Plan may be granted for periods of up to 10 years at exercise prices no less than the fair market value of our common stock on the date of grant; provided, however, that the exercise price of an incentive stock option granted to a 10% stockholder may not be less than 110% of the fair market value of the shares on the date of grant and such option may not be exercisable after the expiration of five years from the date of grant. The grant date fair market value of all awards made under the 2021 Plan and all cash compensation paid by us to any non-employee director for services as a director in any fiscal year may not exceed $750,000, increased to $1,000,000 in the fiscal year of their initial service as a non-employee director. As of December 31, 2023, we had 5,952,012 shares available for issuance under the 2021 Plan.

The following table summarizes stock option activity under our equity incentive plans during the year ended December 31, 2023:

	Stock Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands) [1]
Outstanding at December 31, 2021	6,757,591	$ 8.57	8.7	$ 50,085
Options granted	1,409,475	$ 8.81		
Options exercised	(696,913)	$ 2.15		
Options cancelled or forfeited	(737,079)	$ 11.00		
Outstanding at December 31, 2022	6,733,074	$ 9.01	8.2	$ 8,203
Options granted	3,524,616	$ 5.70		
Options exercised	(228,264)	$ 3.47		
Options cancelled or forfeited	(619,022)	$ 7.17		
Outstanding at December 31, 2023	9,410,404	$ 8.03	8.0	$ 6,432
Exercisable at December 31, 2023	4,440,139	$ 8.06	7.2	$ 4,547
Vested and expected to vest at December 31, 2023	9,410,404	$ 8.03	8.0	$ 6,432

[1] The aggregate intrinsic value is calculated as the difference between the stock option exercise price and the estimated fair value of the underlying common stock at the end of each reporting period referenced above.

Grant Date Fair Value

During the year ended December 31, 2023, we granted 3,524,616 stock options to employees with a weighted-average grant date fair value of $3.88.

During the year ended December 31, 2022, we granted 1,409,475 stock options to employees with a weighted-average grant date fair value of $5.82.

We estimated the fair value of each employee and stock option award on the grant date using the Black-Scholes option-pricing model based on the following assumptions:

	Years Ended December 31,	
	2023	2022
Volatility	74.1% to 75.8%	71.7% to 74.2%
Expected term (in years)	5.0 to 6.0	5.5 to 6.0
Risk-free interest rate	3.5% to 4.9%	1.7% to 4.4%
Expected dividend yield	0.0%	0.0%

As of December 31, 2023, there was $25.8 million of unrecognized stock-based compensation expense related to employee and stock options that is expected to be recognized over a weighted-average period of 2.5 years.

Restricted Stock Units

During the year ended December 31, 2023, we granted 75,000 RSUs and no PSUs under the 2021 Plan. A summary of the status of and change in unvested RSUs and PSUs as of December 31, 2023 was as follows:

	Number of Shares Underlying Outstanding RSUs and PSUs	Weighted-Average Grant Date Fair Value per RSU and PSU
Unvested, January 1, 2022	—	$ —
Granted	259,839	10.07
Forfeited	(3,693)	9.90
Unvested, December 31, 2022	256,146	$ 10.07
Granted	75,000	5.88
Vested	(78,596)	10.04
Forfeited	(47,193)	10.37
Unvested, December 31, 2023	205,357	$ 8.49

The PSUs were granted to our executive officers and will vest contingent upon the achievement of a clinical milestone for CB-010 during a performance period ending December 31, 2024, and an executive officer's continued employment during the performance period. As of December 31, 2023, the achievement of this milestone was not considered probable and, therefore, no stock-based compensation was recorded.

As of December 31, 2023, the total unrecognized stock-based compensation expense related to unvested RSUs was $0.8 million, which is expected to be recognized over the remaining weighted-average vesting period of one years. As of December 31, 2023, there was approximately $0.6 million of unrecognized stock-based compensation expense related to unvested PSUs.

Employee Stock Purchase Plan ("ESPP")

In July 2021, our board of directors adopted and our stockholders approved the ESPP, which became effective on July 22, 2021. The ESPP is intended to qualify as an employee stock purchase plan under Section 423 of the Internal Revenue Code of 1986, as amended ("Tax Code"). We reserved 511,000 shares of our common stock for employee purchases under the ESPP. The number of shares of common stock reserved for issuance under the ESPP will be automatically increased each January 1, beginning on January 1, 2022 and ending on January 1, 2031 by an amount equal to the lesser of (a) 1% of the shares of common stock outstanding on the last day of the immediately preceding fiscal year, and (b) such smaller number of shares of stock as determined by our board of directors; provided that the maximum number of shares that may be issued under the ESPP is 10,000,000 shares. The ESPP allows an eligible employee to purchase shares of our common stock at a discount through payroll deductions of up to 15% of the employee's eligible compensation. At the end of each purchase period, employees are able to purchase shares at 85% of the lower of the fair market value of our common stock at the beginning of the offering period or at the end of each applicable offering period.

We issued 207,567 shares of common stock under the ESPP as of December 31, 2023. We recorded $0.5 million and $0.3 million in accrued liabilities related to contributions withheld as of December 31, 2023 and December 31, 2022, respectively.

Stock-Based Compensation Expense

We recorded stock-based compensation expense related to employee equity-based awards grants in our consolidated statements of operations and comprehensive loss as follows (in thousands):

	Years Ended December 31,	
	2023	2022
Research and development	$ 5,809	$ 4,345
General and administrative	7,941	7,371
Total	$ 13,750	$ 11,716

The above stock-based compensation expense related to the following equity-based awards (in thousands):

	Years Ended December 31,	
	2023	2022
Stock options	$ 12,392	$ 10,982
ESPP	574	310
RSUs	784	424
Total	$ 13,750	$ 11,716

12. 401(k) Savings Plan

In 2017, we established a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code of 1986, as amended ("Tax Code"). Our 401(k) plan is available to all employees and allows participants to defer a portion of their annual compensation on a pretax basis subject to applicable laws. We also provide a 4% match for employee contributions up to a certain limit. During the years ended December 31, 2023 and 2022, we contributed $1.1 million and $0.7 million, respectively, to our 401(k) plan.

13. Income Taxes

We reported pre-tax book losses in the United States of $101.9 million and $99.4 million for the years ended December 31, 2023 and 2022, respectively.

A reconciliation of the U.S. statutory income tax rate to our effective tax rate is as follows:

Years	2023	2022
Federal income tax (benefit) at statutory rate	(21 %)	(21 %)
State taxes, net of federal benefit	(6 %)	(8 %)
Change in valuation allowance, federal	24 %	23 %
Change in valuation allowance, state	6 %	8 %
Stock-based compensation	1 %	— %
R&D tax credits, net of reserves	(4 %)	(3 %)
Other	— %	1 %
Effective income tax rate	— %	— %

For the years ended December 31, 2023 and 2022, our tax provision for (benefit from) income taxes consisted of the following (in thousands):

Years	2023	2022
Current income taxes		
Federal	$ —	$ 163
State	15	2
Total current income tax expense	15	165
Deferred income taxes:		
Federal	1	—
State	177	(95)
Total deferred income tax (benefit) expense	178	(95)
Total income tax expense	$ 193	$ 70

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

The following table presents significant components of our deferred tax assets and liabilities as of December 31, 2023 and 2022 (in thousands):

	2023	2022
Deferred tax assets:		
NOL and tax attributes	$ 51,688	$ 37,120
Accrued expenses and reserve	2,158	1,539
Deferred revenue and expenses	697	7,493
State income taxes	7	7
Capitalized license and patent costs	1,456	1,311
Capitalized research and development cost	37,196	18,462
Lease liabilities	7,098	8,058
Stock-based compensation	4,625	2,921
Total deferred tax assets	104,925	76,911
Valuation allowance	(96,166)	(66,408)
Net deferred tax assets	8,759	10,503
Deferred tax liabilities:		
Investments in equity securities	(1,948)	(1,713)
Lease right of use assets	(5,808)	(7,037)
Fixed assets	(1,560)	(2,134)
Total deferred tax liabilities	(9,316)	(10,884)
Net deferred tax assets (liabilities)	$ (557)	$ (381)

We have evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets. As of December 31, 2022, a valuation allowance of $66.4 million was recorded against our deferred tax assets. As of December 31, 2023, our deferred tax assets were primarily the result of historical federal and state net operating loss ("NOL") and tax credits, deferred revenue and expenses, capitalized research costs and the net of lease right of use assets and liabilities. As of December 31, 2023, a valuation allowance of $96.2 million was recorded against our deferred tax assets.

As of December 31, 2023, we had federal NOL carryforwards of $103.8 million, which do not expire. As of December 31, 2023, we had state NOL carryforwards of $172.7 million, which may be available to offset future state income, and which expire at various years beginning with 2036.

As of December 31, 2023, we generated federal tax credit carryforwards of $14.2 million, which will begin to expire in 2037. As of December 31, 2023, we had state credit carryforwards of $5.6 million available to reduce future tax liabilities, which do not expire.

Beginning January 1, 2022, the Tax Cuts and Jobs Act of 2017 eliminated the option to deduct research and development expenditures in the current year and requires taxpayers to capitalize and amortize pursuant to Section 174 of the Tax Code. As a result, we have capitalized research and development costs of $102.6 million and $93.9 million for the years ended December 31, 2023 and 2022, respectively. We will amortize these costs for tax purposes over five years if the research and development was performed in the United States and over 15 years if the research and development was performed outside the United States.

Under Section 382 of the Tax Code, the ability to utilize NOL carryforwards or other tax attributes, such as research tax credits, in any taxable year may be limited if we have experienced an “ownership change.” Generally, a Section 382 ownership change occurs if there is a cumulative increase of more than 50 percentage points in the stock ownership of one or more stockholders or groups of stockholders who own at least 5% of a corporation’s stock within a specified testing period. Similar rules may apply under state tax laws. As a result of our analysis, we believe that there have been three ownership changes under Section 382; however, none of our tax attributes are expected to have permanent limitations. We may experience ownership changes as a result of future financing or other changes in the stock ownership.

The following table summarizes the activity related to our unrecognized tax benefits for the two years ended December 31, 2023 (in thousands):

Unrecognized tax benefits—December 31, 2021	$	2,202
Increases related to current year tax positions		847
Increases related to prior year tax positions		—
Decreases related to prior year tax positions		(250)
Unrecognized tax benefits—December 31, 2022		2,799
Increases related to current year tax positions		1,269
Increases related to prior year tax positions		123
Decreases related to prior year tax positions		(98)
Decreases related to lapse of statutes		—
Unrecognized tax benefits—December 31, 2023	$	4,093

As of December 31, 2023, no amount of unrecognized tax benefits, if recognized, would affect the effective tax rate. We do not expect a significant change to our unrecognized tax benefits over the next 12 months. The unrecognized tax benefits may increase or change during the next year for items that arise in the ordinary course of business.

We recognize interest and penalties related to uncertain tax positions in income tax expense. As of December 31, 2023 and 2022, we had no accrued interest or penalties related to uncertain tax positions and no amounts have been recognized in our consolidated statements of operations and comprehensive loss.

We file our federal and state income tax returns with varying statutes of limitations. Our tax years from 2012 through 2022 will remain open to examination due to the carryover of the unused NOLs and tax credits. There are no ongoing examinations by taxing authorities at this time.

The following table shows the change in deferred tax valuation for the periods indicated:

	2023	2022
Beginning balance, January 1	66,408	34,521
Change charged to expense	29,758	31,887
Ending balance, December 31	96,166	66,408

14. Net Loss Per Share

The following table sets forth the computation of the basic and diluted net loss per share (in thousands, except share and per share amounts):

	Years Ended December 31,	
	2023	2022
Numerator:		
Net loss	$ (102,070)	$ (99,421)
Denominator:		
Weighted-average common shares outstanding used to compute net loss per share, basic and diluted	73,807,597	60,801,133
Net loss per share, basic and diluted	$ (1.38)	$ (1.64)

Because we were in a net loss position for all periods presented, basic net loss per share is the same as diluted net loss per share for all periods, as the inclusion of all common stock equivalents outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	As of December 31, 2023	As of December 31, 2022
Stock options outstanding	9,410,404	6,733,074
RSUs issued and outstanding	153,000	256,146
Shares available under ESPP	134,276	49,109
	9,697,680	7,038,329

15. Subsequent Events

In February 2024, we sold 1,594,171 shares of our common stock under the ATM Sales Agreement, at an average price per share of $7.33 for aggregate gross proceeds of $11.7 million ($11.3 million, net of offering expenses).

On February 28, 2024, the Superior Court of the State of California for the County of Alameda granted our motion to dismiss the putative class action lawsuit filed against our company and certain of our officers and current and former members of our board of directors, *Lowry v. Caribou Biosciences, Inc., et al.*, Case Number T23-1084 (“Lowry Case”), and the court ordered the case dismissed.